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ORIGINAL ARTICLES.

ADDRESS IN OBSTETRICS.*

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The first advent of a young physician into an assemblage of the great in our profession is inherently accompanied with feelings that hold in abeyance deliberative tendencies, and he is wholly engaged in observation. Such at least was my experience. But with familiarity, hero-worship vanishes, reverence gives place to respect, and this is not an obstacle to the exercise of reflection or criticism.

Hence, presently, I became time and again impressed with the fact that, after the ending of a session, on the return home and for months after, there was more general conversation about the social features and entertainments, or some question of polity, than the scientific exercises. I do not say that the scientific work had no account made of it; on the contrary with some it was their only theme, but I do say that if it made any impression at all, it was of comparatively few days duration with the majority, while other matters would be recalled for months afterward.

Looking backward on twenty years of my life with this society, the papers on scientific questions that I can recall from unaided memory are few, and I submit that those of you who can make the same retrospect will be conscious of a similar experience. With none of the stated topics prescribed for these occasions does the above charge, to my thinking, hold so pre-eminently true as with that of obstetrics.

The organizers of this society in their judgment seemed to think that the proper manner of presenting these stated papers was in the form of *reviews* of progress for the year previous, and whether those to whom was committed such annual histories of obstetrics deviated from this practice I cannot discover. But in 1871 the adoption of a rule prescribing this order, specifically for papers on obstretics, conveys to my thought a covert reprimand for a delinquency of this kind.

Nevertheless, within a very few years thereafter, we find papers on obstretrics breaking from this mooring. Apologies and excuses for the breach, and sometimes for the temerity of writing anything at all, prefix most of them, and all being good, I beg leave to appropri-

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ate them collectively as being applicable to me as much as to any of my honored predecessors. My deviation is not exactly in their line, which generally was a study of some select feature of obstetric science, or else a division of honors with gynecology. If there is a chance of making papers in obstetrics as much to be remembered as any of its kindred, I respectfully submit that it most probably lies in a review of the subject as presented to this society in the past one or two decades. Besides, every physician who has the enterprise to attend these yearly meetings, has kept pace with obstetric progress of any value by means of his journals and magazines, and to rehearse the same here, would be to him a threadbare story. But the unearthing of what has been generally forgotten, *may* be something new.

Since 1873 the questions treated in the various papers on obstetrics range as follows:—

Vaccination during pregnancy, 1; prediction of sex by auscultation, 1; forceps, 5; cephalotripsy, 1; cæsarean section, 4; Crede's method, 1; version *vs.* forceps, 1; rupture of perineum, 5; post-mortem delivery, 1; placenta-previa, 8; post-partum hemorrhage, 5; extra-uterine pregnancy, 6; electricity in uterine inertia, and induction of premature labor, 1; oxytocics, 2; hastening labor, 2; correction of position in difficult labor, 1; post-partum paralysis of bladder, 1; contracted pelves, 1; resuscitation of fetus, 1; suppression of milk, 1; puerperal fever, 4; puerperal eclampsia, 9; diagnosis of early pregnancy, 1; diagnosis of sex in utero, 1; vomiting in pregnancy, 4; laceration of cervix, 3; abortion, 3; asepsis and antisepsis, 10; mastitis, 2; rupture of uterus, 1; anesthetics, 2; symphysotomy, 3.

I can draw no logical relation between the number of times these points were presented and their importance, nor the frequency with which they are encountered in practice. One thing is suggested when examining the record, and that is, that those authors, loyal to their instructions, differed materially in their views of what was important. Perhaps the most unsatisfactory phase of the matter is, that mooted points are left unsettled without the author's views; new and excellent suggestions perish with the birth; and much effort is expended in seemingly no purpose of direction. Perhaps this will be more apparent by illustrations drawn from the record.

Use of the forceps is discussed five times. One author, after reporting the fact of increasing use of the instrument being prevalent, names several justifiable and beneficent reasons for this. Another admits this increased frequent use, but deplores it, styles it an abuse, and calls attention to the array of lacerations of the perineum, cervix uteri and other ailments left in its wake. No reconciliation of these opposite results appears anywhere. Others differ as to the indications for their use. Obviously such handling of the subject does not confirm belief, unify practice, or scarcely convert an old practitioner from his custom; while a young one is either confused or inclined to scepticism as to the value of authorities.

The paper on cephalotripsy proves admirably its preference to craniotomy, and yet how small a percentum of practicing *accoucheurs* possess a cephalotribe, and how many perform craniotomy. Again, several gentlemen discuss the relative value of cæsarean section and craniotomy. Would the discussion be different in conclusion, if cephalotripsy were considered instead of craniotomy?

One contributor seems to me to have had a thought similar to mine, touching the scattering of forces by our present method, and if ever aware of it, I had forgotten it, and not until in the preparation of this paper did I discover this "kindred spirit" who tried to focus effect, and in intent anticipated the talk of this moment by a number of years.

He, in order to measure up to the requirement, sent out as he says, a circular letter to over two hundred recognized obstetricians throughout the United States. This circular embodied the following questions:

First. Have you discovered during the last year anything pertaining to the obstetric art which you regard as new?

Second. Have you had any remarkable recovery of a patient in which treatment, either mechanical or medicinal was entitled to credit?

He continues—"It is highly gratifying to me to be able to state that in answer to the above I received over *thirty* communications, a goodly number of which were reports of cases of interest, and which had not been given to the profession and had occurred during the last year."

These reports were truly valuable, but about half pertained to gynecology and I submit that the latter is not a department of obstetrics, and while they sometimes overlap each other in their exercise, they do so no more than when a case primarily medical, becomes typically surgical. I say this not unaware that high and respected authority asserts the contrary.

Another contributor, instead of ranging over the field culling hither and thither, concentrates his duty on the subject of placenta prævia, describing a method of treatment whereby delivery may be accomplished by the vertex instead of version, the more common practice. He claims that by his plan the life of the child is less jeopardized, and so well does he present his theme that conviction it seems to me should be prompt and forceful. This is one of the few papers I remember since its delivery. It is twice alluded to by subsequent essayists, but the majority of those who heard it have forgotten it as I know by query.

Puerperal eclampsia, though a subject in a number of papers, is still a mooted question both as to etiology and treatment. A unique feature brought forward in this connection, is that the ratio of susceptibility to this malady as between blondes and brunettes is as one to nine. Would not further inquiry on this point be at least interesting?

Report has been made by some papers of measures and expedients, that would seem to be of much value, yet subsequent reviews show either that they could not be popularized, or were too premature for the appreciation of the average practitioner. For instance—one gentleman states that the rate of the fetal heart is higher in a girl than a boy, which is a conceded fact. Further, that the average size of the male fetus is larger than the female,—also not denied. From this is made the deduction: The larger the volume of the fetus, the slower the pulse-rate, and therefore, the rate of the fetal pulse may be a criterion for the induction of premature labor in cases of disproportionate large growth of the fetus. This, at first blush, seems merely a fine-spun theory but such it has not been found to be, and is one of those points of precision not to be too lightly cast aside.

There marks on ectopic gestation show a unique continuity of progressive teaching, almost as regular as though the work of one mind, and yet my table shows the record of six different authors. The first, dating back twenty-three years, discusses it with an apparent feeling as though emerging from darkness into light relative to this topic. The essayist believes the points of diagnosis are being made more clear, but is divided in the matter of treatment, between galvanism and gastrotomy. This of course before actual rupture occurs. Ten years elapse ere another comes before this society, attracted by the accident, and he initiates the matter of electric treatment according to the method of Rockwell, and in very favorable words.

A small lapse again occurs, as though this method were on trial, and then another gives his voice in its favor. Speedily follows one whom we all regard as a safe authority, and while he has good words to speak in its behalf, with cautious discernment he says he thinks abdominal section will soon be preferred.

The next, following with but a year's interval, seems poised in the dividing line of decision, for while in lively measures he recounts what is claimed for the faradic current in this exigency, he tempers his *pronunciamento* with these words—"notwithstanding this positive and definite counsel, coming from a source eminent enough to constitute an authority, more than one dissenting voice has been raised, vehemently protesting against the use of electricity in extra-uterine pregnancy. An investigation into the secondary dangers, as well as into the after-condition of the health of the woman upon whom electric feticide has been performed, is of paramount importance in settling the question of electricity *versus* exsection. Two more follow, one on the heels of the other. The first, with uncertainty, to be read

"between the lines" says: The trouble is apparently on the increase. Electricity is not so much thought of, and surgical procedure prevails. The second but echoes the words of his predecessor.

I submit that this is a beautiful illustration of the mutations to which our science is subject, and yet without which progress seems impossible.

But it is also the *only* sub-division of the obstetric subject that shows this continuity of treatment at the hands of the method in vogue in this organization. For asepsis and antisepsis in obstetric practice, as their use is presented, (if you eliminate therefrom hospital practice) it seems as if *pro* and *con* had each other by the throat, while decision stands by, inactivity looking on.

You may possibly quote against me, "It is easier to pull down than to rear." I admit that such construction may be deduced from what has been expressed.

I believe that obstetric study, while as full of intricacy as any of the other stated branches, is not subject to the rapid diversities of changeful progress as they; neither has it so many to make. In the matter of discovery and improvement, more specifically related to medical and surgical practice, it has been so rapid, wonderful, and of vast stride in the more recent years, that contemplation thereof affects the intellect much as does the kaleidoscope the vision. I think that my predecessors have wrought up to their requirements and many of them displayed Saul-like proportions in their sphere; and yet I have it in my thought that the obstetric phase is not as catching to the ear, as other matter wont be listened to on these occasions.

Allow me to submit, as a plan for the future presentation of obstetrics in this society, *section work*, modified as circumstances or choice may determine. To describe a method now in mind, let me again quote from an essayist brought into use previously in connection with ectopic gestation. You will remember he says: "An investigation into the secondary dangers, as well as the after-condition of the health of the woman upon whom electric feticide has been performed, is of paramount importance in settling the question of *electricity vs.* exsection." For example, let there be named one, or a committee of more than one, to whom shall be delegated the duty of directing research in this line. Let this research be made by the hands of those best fitted by nature and opportunity to execute the same, and selected according to the judgment of the directing centre.

I believe it would be advantageous if these several parties were cognizant of their mutual relations in this work, and held frequent correspondence with each other, or even had appointed assemblings together to compare work and endeavor to harmonize differences or solve reasons for such difference. Would not unification result instead of the antagonisms so often displayed in our professional inquiries, and progress be accelerated?

Or let this directing head issue inquiries in like manner with him, also previously noted, who expressed himself "much gratified" at the result. Still again, when the author of a paper introduces something new, whether original or not, and it appears of value, instead of its being treated as "seed by the wayside," spirited into forgetfulness, let this direction give it issue into proper channels for confirmation.

Likewise, this head-centre may be made the avenue through which an individual investigator may obtain helpers to secure increased area for operation and a multiplying of effort.

After one year of such work, collected and arranged for presentation at our annual meetings by appointed direction, think you not that the gathering will be that of larger and heavier sheaves than heretofore?

A use for even the patent medicine almanac has been discovered. It is a favorite axiom of the optimists, says the *Journal of the American Medical Association*, that everything has its uses, but it remained for the New Mexico Territorial Board of Health to find a use for the patent medicine almanac. In a recently issued circular on the prevention of consumption, among other things, it is advised that "every person so affected should spit into some receptacle and should see that the sputum is soon destroyed by fire. About the house there is no better way than to spit between the leaves of patent medicine almanacs and after a half dozen or more spittings burn the book."

ECLAMPSIA.*

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The word, eclampsia, while it is a convertible term, yet I believe it is generally understood to mean puerperal convulsion, occurring either during pregnancy or during the puerperium, and Roberts divides the cases which may properly come under this term into three classes: Those depending on chronic or confirmed Bright's disease; cases of passive renal congestion or a condition resembling acute Bright's disease, and cases depending on reflected uterine irritation or meningeal congestion.

I cannot but agree with Dr. Cunningham when he says that there is no branch of obstetrics in which a thorough knowledge of the symptoms and treatment is more essential than in eclampsia, and I wish to add that that fact cannot be dwelt upon too strongly by the teacher in the different institutions for medical studies; for while we have premonitory symptoms, unless properly interpreted and understood, they are liable to be overlooked, not alone by the younger members of the profession, but also by the older ones.

Parvin estimates the frequency of occurrence of eclampsia as one in 250 to 300; Lusk one in 600; Cunningham saw six out of 1072 cases of labor. It has been my fortune, or more correctly speaking, my misfortune, to see two out of a record of seventy-two cases of labor, besides one where I was called in consultation and subsequently delivered.

As to etiology, various theories have been advanced, but taken on a whole, the opinion seems to prevail that it is a disease due to the retention in the system of some foreign substance, causing an irritation of the centres of the nervous system; and that albuminuria enters largely into the contributing cause there seems not the slightest of doubts.

The first case I wish to report to you to-day is that of Mrs. K., aged twenty-five, second pregnancy. I was called in the night of January 28, 1894. I found the patient suffering from erratic pains, but with no sign of labor. After giving a sedative, I went home. On the night of February 1st, I was called again about two A.M., and found the patient in labor; but as I had just arrived home when called, having had a confinement earlier in the evening, and finding labor progressing slowly, I laid down to get an hour's rest, if possible, and while I did not get any sleep, still I rested. At about five o'clock, I heard the patient retire. Up to this time pains had occurred regularly about every twenty-five minutes, but the character of these was such as led me to believe that we had not yet arrived at the second stage of labor. After the patient had retired she had two or three pains, after which they ceased, and on going to the bed, I found her in convulsions. Calling the nurse, who sat, nodding, in a chair, to prepare to go for assistance if required, I made an examination, and found the os sufficiently dilated to apply forceps. Not taking time to send for assistance, but giving the patient an hyperdermatic of ½ grain of morphine and $\frac{1}{75}$ grain of atropia, and instructing my nurse to give chloroform, I proceeded to deliver her of a male child (alive, first position). My reasons for giving chloroform were two: First, to control spasm with the aid of morphine; second, to cause relaxation of muscles of the parts. After delivery, convulsions stopped at once, chloroform was discontinued, patient came to before placenta was delivered, which took about thirty-five minutes, after which I gave ½ drachm fluid extract of ergot in two doses, and having drawn off urine for examination, the patient was bandaged and told to rest. No more convulsions occurred and she made good recovery, being out of bed the eleventh day.

Upon examination of urine, I found

* Read at meeting of Alumni of Medical Department, Niagara University, Buffalo, May 12, 1896.

it contained a large amount of albumin, seemingly 75 per cent. The peculiar feature of this case is the fact that there was no edema, and, second, that no albumin had been found in the urine before, it having been examined once every month, for three months previous to labor. This case, therefore, properly belongs to the second case.

The second case was that of Mrs. E., aged twenty-six. In this case slight traces of albumin were found in urine in the sixth, seventh, eighth and ninth months, but only very slight, so much so that no treatment was given and none seemingly was required. I was called November 21, 1895, at about eleven P.M., but the patient being a primipara, and labor being slow, I left, telling them I would be back at about eight or nine o'clock next morning, and to send for me before if pains became strong. When I arrived the second time, I had nearly full dilatation, and she was delivered of a fine, strong male child, about eleven A.M., November 22d, (head presenting also in this case) under chloroform narcosis and with instruments. Calling to see my patient on the evening of the 22d, I found her in good condition. I was summoned in haste the same night about one A.M., by her husband, who told me his wife had "fits." Upon my arrival at the house, the patient was all over the spasm, but as the nurse informed me, she had had two in the time her husband went for me, and while standing at her bedside another occurred, stronger, as the nurse informed me, than the first. I at once administered chloroform, giving first a hyperdermatic of $\frac{1}{2}$ grain morphine and $\frac{1}{75}$ grain atropia. After the convulsions ceased, I discontinued chloroform, but gave an injection of chloral, 40 grains, and potassium bromide, 20 grains, and ten drops of tincture of veratrum viride, when required to control pulse. The chloral and bromide was given every six hours for the first two days, after which it was discontinued. No more convulsions occurred, and she made a good recovery. In this case, however, slight edema had existed from the fifth month of pregnancy and albumin continued in urine until third month after delivery.

The third case was that of Mrs. H., aged thirty, multipara. I was called on July 15th, about two P.M., to consult with two other physicians, who gave me the following history: Mrs. H., aged thirty, third pregnancy, six and one-half months gestation; had first convulsion on July 13th, about noon; another at two P.M. The family doctor was sent for, but as convulssion did not re-occur, no medicine was given and nothing further done. None occurred on Friday, July 14th, but on the morning of July 15th, about three A.M., another convulsion occurred and the spasms continued with small intermissions up to the time of delivery, but were kept partially in control by chloroform. The family physician was called at once when first convulsion occurred, and also another doctor to consult and assist. Full doses of jalap and sulphate of magnesia were given, and veratrum viride in full doses, but spasms still continued when not controlled by chloroform. The urine had at no time been examined. Upon examination of patient, who was edematous beyond recognition, so much, in fact, that had I been assured it was the normal state, I should not have hesitated to pronounce her weight 250 pounds, when it was in reality only 120 pounds.

Upon examination I found a rigid and puckered os with hardly any dilatation, pulse about 125 to 130, stertorous labored breathing. She was bathed in perspiration, and in a state of nearly, if not entirely complete coma. I advised the giving of one-half grain morphine and $\frac{1}{75}$ grain atropia, continuation of chloroform and the emptying of the uterus which was readily agreed to, and I was asked to operate, as the family physician being a relative of the patient preferred not to do so. The other presided at the chloroform. My mode of procedure was as follows: First, I cleansed the vagina with a 1:2000 solution of bichlorid, thoroughly disinfecting it; second, I disinfected my hands and arms in an equally strong solution; third, I proceeded with digital dilatations of os. In about forty-five minutes the patient was delivered of a dead female child of about six and one-half months gestation. Chloroform was now discontinued and the placenta was delivered about thirty minutes later, at

which time the patient had already revived sufficiently so that ½ drachm of fluid extract of ergot could be given. After drawing the urine for examination, the patient was bandaged.

By the courtesy of the physician, I was able to observe this case and also examine urine for some time afterward. The edematous condition gradually grew less, taking nine days before restoration to the normal. The albumin in the urine gradually decreased from about 75 per cent. per volume (as at the first examination) up to the last I was able to obtain, which was about two months after delivery, when yet a slight trace was found.

I was afterwards informed that patient's mother had also suffered from eclampsia, also that in third month of pregnancy she had suffered from abscess of the mammæ and also had continuous swelling below the eyes. What relation these might have had, I am not prepared to say, but to my mind the facts would seem to indicate:—

First, hereditary conditions; second, that uremic poison existed at least from third month and might also have been the cause of the abscess of the mammæ.

SOME NOTES ON AUTOPSIES.*

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Asphyxia and seminal emissions with autopsies in three cases.

On three of the subjects on whom public autopsies were performed during the year, seminal fluid was found beneath the foreskin or genitalia or clothing. There seemed to have been in these cases an ejaculation of seminal fluid during the death agony. In the first two cases the clinical history was known (they were suicidal hanging cases), and the finding of seminal fluid was not a surprise, as it is not infrequently reported in such cases. In the third case it formed but one link in a chain of evidence that was expected to determine the cause of death.

The subject was a large, robust male of forty to fifty years, with no marks of external violence and no pathologic lesions internally to account for death. There seemed to be some slight mitral insufficiency, but not enough to account for death, and heart disease, as an easy reason for unaccountable deaths on finding the least cardiac lesion, has lost its satisfactoriness. The heart itself had not suffered from dilatation and the kidneys were not the dark congested organs that would be found in fatal regurgitant cases. The stomach contained more fluid than usual, but not enough to excite suspicion of large quantities having been swallowed just before death. There was some venous congestion of the lungs, but scarcely enough to suggest a pathologic condition here that had preceded death for any considerable length of time. All the other organs contained no pathologic conditions that would account for death. With the findings in the two hanging cases still fresh in memory, the theory of hanging naturally suggested itself. But there was no preternatural mobility of the neck and no brush-burn. Where, however, there has been no fracture or dislocation of the cervical vertebræ, death taking place from strangulation, the abnormal mobility is not found, and even in certain hanging cases the characteristic brush-burn is either absent entirely or disappears shortly after death.

The decision reached was, in the absence of clinical history, that deceased had come to his death from unknown causes, but that the presence of seminal fluid on the genitals suggested asphyxia as a possible cause.

The history as afterwards learned (it was a coroner's case) confirmed this, as the death was due to drowning, probably suicidal.

* A selection, with some additions, from the "Notes on Autopsies," to which was awarded the prize offered by the Demonstrator of Morbid Anatomy for the best set of notes on his autopsies at the University of Pennsylvania.

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A look into the literature of seminal emissions caused by asphyxia gives some support to but does not very fully confirm the generalization on which the conclusion given above was founded.

In animals asphyxiated, seminal emissions do not seem to occur very frequently. In men in hanging and drowning cases they have been quite frequently reported. This is especially true of hanging cases. Kolliker,* in "Some Observations and Experiments on the Dead Body of a Condemned Criminal," observed contractions which he describes as "typically peristaltic in the seminal canal and ducts some minutes after death had taken place."

This would seem to confirm the opinion held by some that the involuntary discharges of various kinds that accompany asphyxia are due to the removal of the inhibitory influence of the higher volitional centres in the cerebrum over the purely reflex centres in the cord.

Richet† attributes an active part to certain centres in the medulla, the absence of oxygen in the blood-supply here leading to reflex contraction of all the unstriated muscles. But while he mentions dilatation of the pupil, and fecal and urinary incontinence, and calls attention to the forcible peristaltic movements of the intestines, which may even be perceived through abdominal walls, he says nothing of seminal discharges.

Obstetricians have reported a certain number of cases of asphyxiated male children, in whom erections of the penis were noted, and this may perhaps be the result of the action of the same causes. Local disturbances of the circulation in the new-born depend so much on the peculiar conditions of pressure and counter-pressure to which the infant is subjected during labor that very little weight can be attached to such facts as confirmatory of the influence of asphyxia on the sexual centres.

We have not been able to find, then, any very important confirmation of the sexual effect of asphyxia in such cases, though there is a very wide-spread opinion which the observations in our own three cases support, that in some way the lumbar centre for ejaculation is irritated and seminal discharges result, in the two classes of cases, those by hanging and drowning, in which death surely is from asphyxia.

* Zeitschrift fur Wissenschaftl. Zoologie, 1851, T. III. Quoted by Guelliot, Anatomie et Pathologie des Vesicules Seminales.

† Richet. Dictionnaire de Physiologie, Paris, 1895, Art., Asphyxie.

Late suppers, so far from being harmful in all cases, are in some decidedly beneficial, says the Canada *Lancet*. The old tradition that to eat anything before going to bed was sure to cause indigestion and render sleep impossible, is now happily exploded. It is not good in fact to go to bed with the stomach so loaded that undigested food will render one restless, but something of a light, palatable nature in the stomach is one of the best aids to quietude and rest. The process of digestion goes on in sleep with as much regularity as when one is taking violent exercise to aid it, and so something in the stomach is a very desirable condition for a night's rest. Some physicians have declared, indeed, that a good deal of the prevalent insomnia is the result of an unconscious craving of the stomach for food in persons who have been unduly frightened by the opinion that they must not eat before going to bed, or who have, like many nervous women, been keeping themselves in a state of semi-starvation. Nothing is more agreeable on retiring for the night than to take a bowel of hot broth, like oatmeal gruel or clam soup. It is a positive aid to nervous people, and induces peaceful slumbers. This is especially the case in cold winter nights, when the stomach craves warmth as much as any other part of the body. Even a glass of hot milk is grateful to the palate on such occasions; but a light, well-cooked gruel is better, and in our climate, during the cold months of winter, should be the retiring food of every woman, who feels, as many do, the need of food at night.

Pure collodion applied directly to the open wound in fistula in ano, is recommended by Dr. J. Garmell in *Medical Age*. Though the application causes intense momentary pain, this is quickly succeeded by a pleasant, comfortable sensation. It contracts the parts and acts as a protective, beneath which healing takes place rapidly.

COMMUNICATIONS.

THE TREATMENT OF PERNICIOUS ANEMIA.*

ALFRED STENGEL, M.D.,† PHILADELPHIA.

Two years ago I had the honor of reading before the Society a paper on the "Nature, Diagnosis and Treatment of Pernicious Anemia," and of alluding to certain cases that had come under my observation.‡ I wish now to add the experience of the last two years and to discuss further measures of treatment, especially that which has recently become popular—the administration of bone-marrow.

It seems necessary to me now, as it did two years ago, to consider, first of all, the cases which are to be classified as pernicious anemia, and to discuss the nature of the affection. There is little that I wish to add to what I said then regarding the nature of the disease. The weight of opinion has steadily moved toward a general acceptance of the view that pernicious anemia is a hemolytic disease. Aside from the fact that experimenters have produced anemic conditions in animals similar to the disease as it occurs in man, I would again allude to the pathologic lesions discovered in the disease, and especially to the abundant deposits of pigment found in the liver, the spleen and other organs; to the occurrence of icterus, and of pathologic pigmentation of the urine; and to the less certainly significant discovery of peptonuria and excess of uric acid in the urine.

As far as the blood-making organs are concerned, the evidence points to inordinate activity rather than to diminished function. We may assume, therefore, that there is active hemolysis rather than faulty hemogenesis in this disease. In my previous discussion I held the view that while the disease is essentially hemolytic in nature, it might still be proper to speak of deficient hemogenesis in the sense that a certain amount of hemolysis would exercise no decided influence upon the condition of the blood in healthy persons, while in those of lowered blood-making lower progressive deterioration of the blood would ensue. In proof of this view we may recall to mind the fact that similar diseases act most dissimilarly in different persons, and that while in one but a moderate anemia follows a gastro-intestinal or other disorder or a loss of blood by hemorrhage, in another there is extreme debility and deterioration of the blood. Cases might then occur in which the ordinary wear and tear of life, in a person of deficient hemogenetic power, would lead to the clinical picture of pernicious anemia. Such cases, however, do not seem to occur, as far as any observations now at hand would indicate. In all cases in which studies of the pathology of the disease have been made, there is evidence of active hemolysis. Therefore we are led to the belief that in all cases of pernicious anemia the condition of the blood results from active blood-destruction, which is either so decided that normal hemogenesis cannot cope with it, or which is decided enough to overbalance the deficient hemogenesis of the particular individual.

The essence of the disease is, therefore, blood-destruction. The seat of this remains doubtful, though recent experiments and investigations have partially cleared the way for a fuller knowledge. The occurrence of hemoglobinemia, which is occasionally observed, and of icterus, which is an almost constant symptom, led at first to the assumption that there is in this disease, as well as in other diseases attended with so-called hematogenous jaundice, widespread blood-destruction

* Read before the Philadelphia County Medical Society April 8, 1896.

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‡ *Therapeutic Gazette* for June, 1894.

in the general circulation. Recent investigations, however, leave no room for doubting that such jaundice can have only an hepatic origin. Experimenters are unanimous in the view that blood-destruction leading to the formation of hematoidin, bilirubin or hematoporphyrin and consequent jaundice, can have its final stage only within the liver. The preliminary separation of hemoglobin or hematin may occur in the general circulation or in any local part, as in the portal area, but the final change occurs in the liver. Whatever view we may hold as to the original seat of the hemolytic changes, we cannot deny the rôle of the liver as a contributing organ in the final changes brought about in the circulating blood.

Quincke, Mott, Peter, Hunter, Griffith and Burr, and others have investigated the pigment-deposits found in pernicious anemia, and have in particular called attention to the iron-containing pigment of the liver and spleen. Hunter in some of his earlier studies found that there was evidence of blood-destruction in the spleen, in the gastro-intestinal tract, and in the bone-marrow, and he regarded the relative importance of these organs as falling in the order in which they are named. More recently he has inclined to the view that the spleen is the all-important seat of hemolysis as far as pernicious anemia is concerned. This view, it seems to me, is a retrograde one, and based, as it largely is, upon the occurrence of large amounts of iron-containing pigment in the spleen rests upon uncertain ground. Pathologists have long maintained, and with apparent justification, that the spleen is a filtering organ, as are the lymphatic glands. The presence of abundant pigment, and particularly that in the lymphoid nodes where it is most abundant, might, therefore, readily occur in cases of blood-destruction taking place in any part of the circulation. This is well illustrated by the enlargement and pigmentation of the spleen, which occur in experiments in which blood-destruction is brought about by injection of distilled water or direct transfusion of blood into the circulation. The existence of pigment in the spleen is, therefore, no indication that it originated there; neither is the presence of brownish coloring-matter resembling hematoidin or bilirubin to be looked upon as of splenic origin.

On the other hand, there is evidence of a clinical kind that blood-destruction may have a gastro-intestinal origin. I need only allude to the constant anemia of diseases of this part of the body, to the occurrence of severe anemia in cases of gastric atrophy, in some cases of gastric carcinoma, ulceration, etc., and to the clinical evidence that has been brought by those who favor the view of Sir Andrew Clark regarding the intestinal origin of chlorosis. I may further allude again to the cases of Landoz, Jürgensen, Meyer, and others, in which severe anemia was rapidly cured by lavage or removal in other ways of bacteria and noxious agents of other kinds from the gastro-intestinal tract. It seems likely that the first stages in the process of hemolysis begin in the capillaries of the gastro-intestinal tract, and that the final change, with the formation of iron-containing pigment, occurs in the liver. That this pigment is not brought to the liver for the purpose of elimination with the bile (as would at first sight seem probable) is proved by the fact that the bile normally contains but a trace of iron. It is more probable, therefore, that the iron-pigment is formed in the liver and subsequently removed to parts where it may be utilized or excreted. The former purpose is probably carried out in the bone-marrow and spleen, the latter in the gastro-intestinal tract and to a very small extent in the kidneys.

I believe, then, that pernicious anemia is a hemolytic disease, in which hemogenesis may or may not be equal to the normal, though always insufficient to cope with the hemolysis; that this hemolysis is originated in the gastro-intestinal capillaries, and is dependent upon poisons generated or at any rate absorbed from that tract; that the final splitting-up of the blood coloring-matter occurs in the liver; and that the hemosiderin is subsequently removed to the spleen and bone-marrow (perhaps for purposes of hemogenesis) and to the intestines and kidneys (to be excreted).

As far as our knowledge of the disease extends to-day, it is but a symptomatic disorder of the blood, and not a disease

in the strict sense. It matters not whether a cause is discovered or not; whether there be gastro-intestinal lesions, parasites in the intestines, pregnancy or parturition, or no discoverable cause—the resulting condition of the blood, the symptoms, the course and tendency to a fatal termination, and the general post-mortem lesions are the same; and I can therefore see no justification for setting apart a group of cases as true Addisonian pernicious anemia, and calling all those in which causes are found severe secondary anemia. One set of cases is as progressive and as pernicious as the other, and the deduction seems obvious that the apparently causeless forms are such as have baffled our minuteness of examination or our methods. I have seen cases of pernicious anemia dependent upon or associated with gastric atrophy, gastric carcinoma, gastritis with polypoid growths, parturition, and ankylostomiasis (in this case the blood only), and have been unable to see differences of a characteristic kind from other cases in which the disease appeared wholly causeless. All cases of severe anemia—or, as it has been suggested to call such cases, of *cachemia*—in which maximum degrees of oligocythemia, with microcytosis, macrocytosis, and poikilocytosis, occur, in which nucleated red corpuscles are discovered, and the hemoglobin is relatively excessive or at least approximately equal in percentage to that of the corpuscles—all such cases may be designated as pernicious anemia. In the treatment I believe it is wise and proper to regard all such as cases of hemolytic disease of gastro-intestinal origin.

The treatment may be divided into three heads: first, "specific" treatment; second, the treatment directed to altering the general conditions of the circulation; and third, treatment of the intestinal conditions or of underlying affections which influence unfavorably the progress of the case or perhaps act as the immediate causes of the disease.

The "specific" treatment of pernicious anemia consists in the use of three remedies—iron, arsenic and bone-marrow—and I shall consider them in this order, as it is the order in which they have been brought before the notice of the profession.

Iron.—The value of iron in anemia is unquestioned. It may be true, as Bunge and his pupils maintain, that only a comparatively small proportion of the iron administered is absorbed; but whether this is the case or not, clinical experience allows no question regarding the value of this drug in various anemic conditions. It is particularly valuable in cases of chlorosis and in the ordinary anemia of debility. Its use has been advocated in pernicious anemia, and in certain cases good results have been obtained. In most cases, however, iron is of little value, and I am positive that I have seen it contribute to the patient's discomfort and unfavorably influence the progress of the disease, when it was administered during the active stage of pernicious anemia. In convalescence it is a valuable remedy; and though the view of Stockman, that iron is practically a necessity at this stage, is probably too radical, there is no doubt that the combination of iron with arsenic or other treatment is most desirable during the convalescence of this disease. It may be administered in the form of Blaud's pill, or as iron albuminate, or in the form of one of the physiologic preparations now in the market. The latter, I believe, have no special advantage over some of the inorganic preparations, excepting that they may be more acceptable to the stomach and not so constipating.

Arsenic was introduced by Isnard in 1865, but was more particularly commended by Bryam Bramwell, to whom the credit of its introduction is due. There is no doubt that in many cases of pernicious anemia this remedy is little short of a specific. It is to be recalled, however, that pernicious anemia, like other anemic diseases, is liable to curious and unexpected improvements, and Laache has pointed out that spontaneous recovery is occasionally met with. With the knowledge of these facts before us, however, we may assert that the remedy has really power to combat the progress of the disease and perhaps to effect a cure. Regarding the manner in which arsenic acts, little can be said. It may be that in some way it prevents intesti-

nal putrefaction and thus limits the formation of the immediate cause of the disease; again, it may exercise a direct influence upon the corpuscles of the blood, increasing their resisting power; or, in the third place, it may increase the hemogenetic function. I am inclined to believe that it acts in some way to prevent blood-destruction and possibly at the same time to regulate the function of the bone-marrow and other blood-making organs. If it stimulated the latter without influencing blood-destruction, we might expect a sudden increase of nucleated corpuscles and other immature forms of erythrocytes after its administration, but such does not occur. There is a progressive tendency on the part of the blood to the assumption of a more healthy appearance in size and shape and other features of the corpuscles; so that it would seem as if blood-destruction were progressing less rapidly and the hemogenetic organs were influenced to restore the normal blood-formation. This, however, is largely speculation, and perhaps after all unimportant. The clinical fact remains that this remedy influences favorably the course of the disease. Whether the improvement is a permanent one or not cannot be positively asserted. Cases of apparent cure after intervals of three, five or more years have been reported; but on the other hand temporary improvement has been noted by Pye-Smith, Mackenzie, Barrs, Russell, and others; while in many of the cases in which definite cure was supposed to have occurred, the patient has passed out of observation. My own experience would indicate that in many cases in which the patient has been apparently cured, the disease has in reality been only superficially influenced, as may be seen in the reports of some of the following cases, in which, though the patients presented a healthful appearance and believed themselves to be well, the blood-examination showed a continuance of the disease. Such cases are prone to recur, and Mackenzie has specially called attention to a form of relapsing pernicious anemia. In this form, I incline to believe, there has never been a definite cure, the intervals representing periods of apparent recovery, though blood-examination might have shown a continuance of the disease.

The administration of arsenic in cases of pernicious anemia is a matter of considerable importance. In all cases it should go hand in hand with repeated examinations of the blood, and should be regulated by the response or tolerance of the patient. Sometimes improvement is at once apparent, and only moderate doses are required; in other cases excessive doses, even to the production of toxic symptoms, may fail to influence the course of the disease. Ordinarily Fowler's solution, administered by the mouth in doses of from five to twenty drops three times daily, proves sufficient. If the dose has been increased to twenty drops without noticeable change in the condition of the blood, great care should be exercised in the further increase of the dose. In particular it is to be remembered that gastro-intestinal disturbances may be provoked and may cause rapid loss of ground. When this is feared, it is well to administer the remedy hypodermically. Five or ten minims of Fowler's solution, diluted with an equal quantity of water, may readily be administered in this way, and I have never found it in the least irritating. The results are sometimes quite striking, in contrast with the effects of the administration of like amounts by the mouth.

The following cases illustrate the value of arsenic in the treatment of pernicious anemia and at the same time illustrate the point which has already been brought out—that apparent cure does not imply real recovery, and that it is imperative to continue the treatment without interruption for a long time, perhaps for years, despite the most encouraging appearances.

Case I.—A. T., aged sixty-three, single, presented herself at the Howard Hospital in June, 1895, giving the following history: She was a healthy girl and woman until five or six years ago, when she began to suffer pain in the chest, weakness, and disturbance of stomach. There was increasing flatulence and repeated vomiting, which finally became almost constant; the appetite was poor; there were frequent headaches; but the bowels remained regular. Her sleep became disturbed,

and she grew more and more weak. About six months before admission she began to be pale and noticed that she was growing short of breath; cough became a distressing symptom, and so continued, with pain in the chest.

On admission her eyesight was not good, and she complained of a feeling of pins-and-needles in her feet and ankles; brain and memory were active; extreme weakness and pallor were noted, the color being yellowish; the conjunctivæ were somewhat icteric; the feet were swollen, and pitted on pressure; the tongue was coated; the lungs were healthy; the heart-sounds were very feeble, but no murmur was audible; the abdomen was moderately distended and tympanitic; the knee-jerks were a little increased, but there was no loss of sensation. Examination of the blood showed 1,400,000 red corpuscles to the cubic millimeter and forty per cent. of hemoglobin. The stained preparation of the blood showed marked irregularity in the size of the red corpuscles and some irregularity in shape; there were nucleated red corpuscles, both small and large.

The patient was given Fowler's solution in ascending doses.

On July 12th, the patient returned, feeling much better; there was almost no swelling of the legs; the appetite was good, but flatulence was still present and the tongue was coated; the knee-jerks were still excessive, but the sensory symptoms were less prominent; the lips were becoming red. The red corpuscles numbered 1,615,000 to the cubic millimeter; the hemoglobin-estimation was 45 per cent. Examination of her eyes by Dr. Posey showed some evidences of old hemorrhages.

On July 26th she had improved remarkably in every way, and felt that she was quite well. The red corpuscles numbered 2,560,000 to the cubic millimeter, and the hemoglobin-estimation was 62 per cent.

During August and September the patient was quite comfortable, but in the latter month she had an attack of bronchitis and relapsed. On October 8th she returned with 50 per cent. of hemoglobin and 2,000,000 red corpuscles to the cubic millimeter. She was again ordered to take arsenic, which lately she had neglected, and during November she improved considerably. In December she was careless of her medicine and was considerably exposed; so that by the end of the month she had again relapsed.

In January, 1896, I saw her at her home, and found that she had acute lobar pneumonia, the base of the right lung being consolidated. There was considerable edema in the other parts of the lung. Treatment with arsenic was continued vigorously, and strychnin and other stimulants administered. After three weeks she had practically recovered; and in March she was again in her normal condition, though still pallid and yellowish, short of breath on slight exertion, and troubled with slight cough. Her hemoglobin-estimation was now 45 per cent.

Case II was under the care of Dr. George Woodward, with whom I saw her in August, 1894. The history was as follows: H. M., aged seventy-seven, born in England, came to America when fifty-three years old. She was married at twenty-one years, and bore twelve children; there had been no miscarriages. Her previous health had been poor for a number of years, dating from an obscure illness. She had been asthmatic for twenty years. In 1890 her husband died; the loss greatly affected her, and her memory and general health began to fail. In 1891 she had a severe attack of influenza, and in 1892 another. Since the latter date she had scarcely been well at all. She came under Dr. Woodward's care in April, 1894, with dyspeptic symptoms. She became profoundly anemic, and there was a murmur over the base of the heart; the lungs were normal; the urine was normal; the pulse generally was about 60; the respirations 22. Her anemia and debility increased progressively, so that she was in bed the greater part of the day, and finally in July was entirely bed-ridden.

In August the following notes were made: "The patient is apparently well nourished, having lost little if anything in weight. Her skin is pallid—ofttimes yellowish; and the conjunctivæ are pearly blue. No arcus senilis is present. There is some edema of the ankles, and at times this becomes

marked. There are discolorations of the skin along the tibiæ, and spots of ecchymosis on the forearms. The superficial vessels are not prominent. The pulse is 60, somewhat irregular and collapsing. The area of cardiac dulness is increased, and a double murmur is heard over the root of the aorta. The respirations number from 26 to 28, and are regular and sometimes asthmatic. There is no cough or expectoration. The voice is clear. Her stomach is easily disturbed; but the bowels are regular. The liver and spleen are of normal dimensions. There is no fever. The urine is light-colored and normal. There has been no pain at any time, but the patient complains of numbness of the legs. The knee-jerk is present, though greatly lessened. The thyroid gland is enlarged."

Examination of the blood showed 2,000,000 red corpuscles to the cubic millimeter and 25 per cent. of hemoglobin; the drop as it exuded from the finger was light-colored, and the clear plasma separated readily from the corpuscles. Examination of the stained preparation showed abundant megaloblasts and normoblasts, marked poikilocytosis, and irregularity in the size of the corpuscles.

Arsenic was administered in ascending doses by the mouth, and was continued with little interruption.

In October, 1894, I saw the patient again. She had been out of bed for some weeks and was apparently quite well. Her memory was still poor, but she considered her physical health normal. Examination of the blood, however, showed only 1,800,000 red corpuscles to the cubic centimeter, and 65 per cent. of hemoglobin. She was directed to continue the arsenic.

In February, 1896, I saw her for the third time. She had taken Fowler's solution almost without interruption since October, 1894. She now seemed quite well—in fact, more robust than most persons of her age, now over seventy-eight. There was still a cardiac murmur at the aortic region, systolic in time, and a less distinct diastolic murmur. The hemoglobin was between 95 and 100 per cent. (The reading was probably a little high, as some congestion was produced to obtain the drop of blood).

Bone-marrow was introduced as a remedy in the treatment of pernicious anemia by Fraser, of Edinburgh, in 1894, and has since been used by a number of clinicians, who have reported variable results. The use of bone-marrow can scarcely be said to rest upon a scientific basis, and some have objected to it upon the ground that the bone-marrow is in nowise an organic secreting tissue, and that in consequence little good need be expected from its administration. It has been held that, as the formation of the blood, with which the bone-marrow is concerned, is a process of cell-multiplication rather than a secretion, the administration of extracts could scarcely be expected to give results. On the other hand, it may be said that our knowledge regarding the function of the bone-marrow, and particularly its relation to the fluid elements of the blood and to the general metabolism, is so meager that we are not permitted dogmatically to assert that it is devoid of action of the chemical sort and the disproof or proof of the value of this remedy must therefore rest for the present upon clinical experiment rather than speculation. Fraser, Danforth, Drummond, Barrs, Hamilton and others have reported cases in which bone-marrow seemed a useful remedy, and I shall record below a case of which the same could be asserted. On the other hand, J. S Billings, Jr., Stockman and others have found it useless in a small number of cases, and I shall report a case in which the same observation was made. It may be said regarding the latter that the condition of the patient was extremely unfavorable when the remedy was first administered, and the surrounding conditions did not permit of the most accurate conduct of the treatment.

Some of those who have objected to the use of bone-marrow on theoretic grounds have sought to explain its occasionally apparent usefulness by the statement that it contains sufficient iron to prove beneficial in anemia. It would seem scarcely necessary to dispose of this view by accurate analysis, as the amount of the bone-marrow administered has always been relatively small and therefore the amount of iron consumed in this way must be considerably

below that ingested with the food; but Stockman has taken the trouble to analyze the marrow. Taking the yellow marrow of three specimens from different animals, he found in one (26 gm.) 0.001 gm. of iron; in the second (20 gm.), slightly less; and in the third (100 gm.), 0.0025 gm.; therefore an ounce of yellow marrow contains about one sixty-fifth of a grain of iron. In analyzing the red marrow of the calf, he found that 40 gm. contained 0.0035 gm. iron, and 26 gm. contained 0.002 gm.: or an ounce of the marrow contained about one-thirteenth of a grain of iron. These facts are sufficient to show that the marrow does not act by virtue of the iron contained.

Regarding the variability in action in different cases, while it must be admitted that the entire number reported has been insufficient to warrant positive conclusions, I have been inclined to believe that much depends upon the preparation of the marrow, and in one of my own cases a glycerin extract was employed without striking effect, while the raw bone-marrow acted immediately, to all appearances. It was the failure of the glycerin extract made from calves' ribs that led me to turn to raw bone-marrow. I had previously used the marrow plain, but had found that the patients soon rebelled and that the stomach became unretentive. I therefore looked for a more acceptable form and found that by taking the red marrow of the tibia of the calf, mixing it with an equal quantity of glycerin, and rubbing the mixture up in a mortar, a preparation could be made, the taste of which was pleasant, and which could be eaten upon bread without danger of disturbance of the stomach. The preparation may be made a little more fluid by the addition of claret or port wine; but I prefer the simple glycerin jam. From one to two ounces of this may be administered during the day. I have always been careful to get marrow which was quite red, as this is certainly the functionally active sort.

I shall now report two cases of advanced pernicious anemia in which bone-marrow was used. In the first, raw bone-marrow was employed for a short time, but not long enough to determine its value; later, arsenic with a glycerin extract of bone-marrow was given without notable effect; finally the marrow-jam was administered when the patient was almost moribund and when large doses of arsenic had been given continuously without any effect. Though the arsenic was continued in small doses at the same time, the immediate and striking improvement which occurred seemed fairly attributable to the bone-marrow. In a subsequent relapse bone-marrow was given again, but without effect.

In the second case the patient was far advanced when the treatment was begun, and the bone-marrow exercised no influence.

It is obvious that deductions cannot be drawn from a single case of improvement or of failure. In the first case the sudden and striking improvement might have been co-incident, though the manner in which the stomach became retentive and the general conditions improved was most suggestive. The failure in the second case may have been due to the advanced stage of the disease, and certainly the conditions under which this patient was treated did not permit of the same accurate regulation and observation as in the first case.

Case III.—H. S. B., aged thirty-nine, presented a family history that had no bearing on his case. He had been a strong, healthy man, working hard all his life. In 1886 he had malaria while living in Delaware. He was accustomed to the use of liquor and tobacco in excessive quantity. There was no venereal history. In 1891 he had an attack which was considered influenza, and he asserts that he never entirely recovered from this. The fatal illness began in June, 1893. He had been working hard and drinking considerably, taking one glass of whisky before breakfast every morning. He first had diarrhea and began to become pale, his strength failing and his memory growing poor. He became a patient of Dr. A. J. Bevan, with whom I saw him first in September, 1894; he was then extremely pallid and of a yellowish hue, puffy beneath the eyes and about the ankles; dyspnea was pronounced, and he complained of passing more than the normal quantity of urine and of being disturbed at night to empty the bladder. Examination showed his lungs to be normal. There

was a systolic murmur at the pulmonary region, and less distinctly at the apex. Examination of the blood showed 1,150,000 red corpuscles to the cubic millimeter and 40 per cent. of hemoglobin; there was no leukocytosis. The specimen of stained blood under the microscope showed typical microcytes, macrocytes, and nucleated red corpuscles. Poikilocytosis was not pronounced.

The patient was given large doses of arsenic, at times enough to produce toxic symptoms, and improved somewhat. Later he ate raw beef bone-marrow until he sickened. During this period there was considerable improvement in every way. He next took a glycerin extract made from calves' ribs, together with arsenic, and continued to improve, though slowly. He was quite comfortable during the winter of 1894–95. In February, 1895, he sustained an injury and then had an attack of bronchitis, in consequence of which his condition became worse, and in April, 1895, he was again quite weak and had considerable dyspnea, his blood showing 1,000,000 red corpuscles to the cubic millimeter, and 40 per cent. of hemoglobin. He was treated with arsenic, but took his medicine irregularly and grew steadily worse.

In June, 1895, he was admitted to the Howard Hospital in an extremely weak condition. The blood showed 600,000 red corpuscles to the cubic millimeter and 25 per cent. of hemoglobin. There was marked poikilocytosis, many large nucleated corpuscles, and some hemoglobinemia. He became wildly delirious and had to be restrained in bed; his stomach refused every form of food. Arsenic had been given in large doses. Bone-marrow jam was now administered in doses of one, two, or three teaspoonfuls, four to five times daily, and was well retained. At once there was manifest improvement, and after a month the patient was seemingly as well as ever. The blood, however, showed only 1,500,000 red corpuscles to the cubic millimeter and 45 per cent. of hemoglobin.

The man left the hospital, refusing further treatment. His condition again grew serious in the autumn, and in December, 1895, he stopped work. This attack was gradual in onset, the patient growing weaker and weaker. He entered the University Hospital June 8, 1896, presenting the characteristic features of marked pernicious anemia. His color was yellowish, the subcutaneous tissues were flabby, there was puffing beneath the eyes, and the vessels of the neck throbbed. There were venous and arterial murmurs. The heart was somewhat increased in size, and there were murmurs at the apex and base. The blood showed 1,100,000 red corpuscles and 3,125 white corpuscles to the cubic millimeter, and 20 per cent. of hemoglobin; there were nucleated red corpuscles, microcytes, and macrocytes. The urine was light-colored, with a specific gravity 1.005, and contained no albumin or sugar. The man was given the preparation of bone-marrow he had before received, but there was no improvement noticeable; on the contrary, his condition deteriorated from the first. For several days this was gradual, then a sudden change set in, and he died after a few days.

The autopsy showed characteristic changes of pernicious anemia—extreme fatty degeneration of the organs, violaceous color of the bone-marrow.

Case IV.—Mrs. B., aged about sixty, had been healthy the greater part of her life. In childhood she had had measles, but no other illnesses. She was married at twenty-four, and had four children; there had never been any difficulty in or after any of her labors. She had had hemorrhoids when she was fifty, and had lost some blood now and then since that time. Her health was good until January, 1895, when her daughter noticed that she was growing mentally slow and somnolent, and she complained of numbness in the feet. Dr. A. J. Bevan was called, and found her pale and greatly weakened; dyspnea followed exertion, and several times she had slight syncopal attacks.

I saw her with Dr. Bevan somewhat later, and found the conditions noted. Her color was rather yellow than white, and the conjunctivæ were yellow. She was mentally slow and apathetic, taking little interest in her surroundings.

The drop of blood as it flowed from the finger was extremely thin and presented the characteristic appearance of meat-washings. The red corpuscles

numbered 1,142,000 to the cubic millimeter, and the hemoglobin-estimation was 25 per cent. of the normal; there was no leukocytosis; the corpuscles were irregular in shape and size, and nucleated forms, both large and small, were present in rather considerable abundance.

The patient was put upon treatment with bone-marrow jam, but she steadily grew worse; arsenic was then given in conjunction, but despite the treatment she sank and died.

There was no autopsy.

It would be a grave error to suppose that the treatment of pernicious anemia was satisfactorily fulfilled by the administration of one of the "specific" remedies and the regulation of the ordinary details of hygiene. There are other and important indications, and at times I am sure that arsenic or bone-marrow would prove of little use unless auxiliary measures of treatment were instituted at the same time. First of all, I believe it is necessary to regulate the circulation and to consider the quantity of blood. Much remains to be learned regarding the circulation of blood in the tissues, though we have learned enough to know that frequently there is stagnation of corpuscles, and that therefore but a part of the blood-corpuscles may be circulating and functionally active. It is of prime importance, therefore, in the treatment of a severe anemic disease, such as the one under consideration, that all of the available corpuscles —non too many at best—be brought into the circulation and rendered useful. For this purpose massage is of great value. It has been pointed out by a number of observers that the corpuscles of the hand held in air number from five to ten or fifteen per cent. less per cubic millimeter of blood than do those of the toe or other dependent parts. In my own experiments in this direction I have found a uniform excess of from eight to ten per cent. in the blood of the toe, and practically a similar excess of hemoglobin. Recently J. K. Mitchell demonstrated the advantage of massage to equalize the circulation, and found the number of corpuscles to be thereby quite uniformly increased, even in the most pronounced forms of anemia. It is therefore clear that in the treatment of pernicious anemia, rest in the horizontal position (which will favor the maximum effect for the cardiac action) and massage (which will return to the circulating blood and to usefulness a large proportion of corpuscles) are of considerable importance.

Next to these measures it is of importance to consider the question of quantitative anemia. Unfortunately there is no clinical method available for the determination of the quantity of blood; but the difficulty with which the blood flows from incisions, and the general desiccated condition of the patients in some cases, particularly towards the end of the disease, leave little doubt that reduction of the blood-mass plays some part in the pathology of the affection, though perhaps not so frequently as is the case in certain other forms of anemia. Near the end of the disease the patient's condition may be endangered by this reduction in the quantity of blood and the consequent failure of adequate circulation, more than by deterioration in the quality of the blood, and measures are called for which will increase the blood-mass. Injections of large quantities of water or of weak saline solution into the large bowel have the double advantage of stimulating peristalsis and thus of improving the general circulation, and perhaps at the same time removing from the system noxious substances, and also (a greater advantage) of supplying a certain amount of liquid to the empty vessels. In one case of pernicious anemia which has come under my observation, there was rapid and unmistakable improvement from the first administration of colonic douches; and while to an extent this improvement was ascribable to improvement in local conditions of the colon, to a large degree it was, I think, owing to absorption of liquid from the bowel.

In certain cases it may be of advantage to substitute for colonic injections hypodermic or intra-venous injections. The latter form commends itself particularly in cases in which the circulation has become considerably enfeebled, and absorption of the water is therefore unlikely to occur speedily from the subcutaneous tissues or from the bowel. These methods of improving the circulation by increasing the quantity of the

circulating medium are, I believe, of incalculable advantage in many cases, and failure of arsenic at times is due to the fact that such measures have not been taken to improve the circulation and make the further action of the specific remedy possible.

Brackenridge, von Ziemssen and others have recently advocated transfusion with defibrinated blood, but there seems little reason to believe, in the light of our present knowledge, that this procedure has any advantage over simple saline injections. The corpuscles introduced with the blood probably undergo destruction rapidly, and it is doubtful whether they are functionally active even for a short time.

The treatment of the underlying affections which perhaps act as the immediate causes of the disease, or which influence unfavorably the progress of a case, comprehends attention to every detail of the patient's physical condition. In particular, however, it is important to consider the question of intestinal antisepsis and other treatment directed to the gastro-intestinal tract. The diet should be so selected that the food may be readily digested and that it may undergo as little decomposition as possible. Liquid food, and particularly milk, will prove most useful. In many cases it is of advantage to have the foods predigested. The quantity at a meal should be small, but food should be given at frequent intervals. Hydrochloric acid and bitters may be used to aid digestion.

Finally, if our speculations regarding the nature of the disease are correct, and the prime cause is gastro-intestinal fermentation, it should be possible to influence favorably the course of the disease by measures directed to the prevention of fermentation in this tract. This has undoubtedly been done in a number of cases. I have already referred to the satisfactory results obtained from colonic lavage in one case; and although this was partly due to the absorption of liquid from the bowel, it was due also, to some extent, to the mere cleansing effect of the injections. Certainly this method of treatment offers sufficient hope of beneficial results to warrant its more extended introduction. With careful manipulation it is easy to flush the entire colon with water, and probably also a large part of the small intestine; and gastric lavage may be practised with but little inconvenience. This treatment is particularly advisable in cases in which alternating constipation and diarrhea or excessive vomiting with a fermenting condition of the vomited materials give evidence of the gastro-intestinal disturbance.

Intestinal antiseptics, such as salol, hydro-naphtol, and the like, have been employed, and Gibson in particular has reported good results from this mode of treatment. The failure of intestinal antiseptics to control fermentative processes in other affections, however, makes their use less advisable in pernicious anemia than theoretic deductions would lead us to expect.

The treatment of pernicious anemia in association with intestinal parasites is clear and direct. It consists in the administration of remedies such as thymol, santonin, or other anthelmintics, and the subsequent use of tonics, arsenic and iron.

In conclusion, I would repeat that pernicious anemia is probably a hemolytic disease, of gastro-intestinal origin, dependent upon fermentative or putrefactive changes occurring in the stomach and bowel; that the treatment calls for remedies of a specific nature and for measures directed to the improvement of the general circulation and to the prevention of gastro-intestinal fermentation. In the present state of knowledge, arsenic is the remedy on which most reliance may be placed. Bone-marrow has seemed to give results in a number of cases, but these have not yet been sufficient to furnish ground for an accurate opinion.

The Treatment of Hemorrhoids.

A novel procedure for the treatment of hemorrhoids is recommended in a German publication. It consists in painting the nodules once daily with a 2-per-cent. solution of nitrate of silver, which causes a gradual reduction in size without the least pain. In the cases reported the tumors had entirely disappeared in the course of one or two weeks.

CURRENT LITERATURE CONDENSED.

Food Inspection.[1]

The enforcement of rigid and efficient food inspection has shown itself to be of great value in a large city, and while some zealous officers or inspectors may have done injustice to dealers, still, on the whole, this method of protecting the public against bad food supplies has been of the greatest benefit.

Milk was one of the first articles of food to receive close attention, and now an inspector of bakeries in Baltimore will, it is hoped, remedy some of the existing evils in that industry.

While the outside of a loaf of bread may reach a very high temperature in the process of baking, it is doubtful if the center of the loaf is always thoroughly sterilized, and hence any dirt or impurities in this part of the bread may not be deprived of their harmful properties, and one of the acts of the bakery inspector is to look after lack of cleanliness. It has often been reported that bakers sleep on their bread boards in small, badly-ventilated bake shops, and it is this glaring wrong that will first be righted. Then bakeries in dark cellars and unhealthy places will no longer be allowed.

The city chemists will look for poisonous and dangerous products in fancy cakes and candies, and for the detection of such things the municipal laboratories of chemistry and bacteriology will be called into requisition. Now, not only is the milk inspected, but the dairy stables will be carefully looked into, and in the near future a veterinarian will be added to this food detective force.

When such work is undertaken in a truly honest way by competent men, it can be easily seen that much benefit will redound to the consumer of these products, and no one but the unclean and dishonest dealer will object to any reasonable inspection.

The food detective force in some foreign cities is a very important part of the municipal government, and demands large appropriations, which the city fathers of those enlightened places find it economy to pay. Unfortunately, the inspection in Baltimore can only be carried out within the city limits, and in the case of dairy farms which are outside of this line, some are near enough to supply milk to the city, but not near enough to come under the inspection rules.

As years go by, these small but important beginnings will gradually grow until the dealer who sells impure goods, or who maintains a filthy and unhygienic dairy farm, will be compelled to reform, and the supply of pure and wholesome articles of food, such as bread and milk, will be cheapest in the end.

[1] Editorial, *Maryland Medical Journal.*

Scurvy in Bottle-Fed Babies.

Scorbutus is one of those diseases with which the practitioner of to-day has but little clinical acquaintance, says Frank W. Garber in *Therapeutic Gazette*, 1896, xx, 226. The older physicians, and especially those of seaboard towns, or those who have served in the army or navy, can recall it as one of the scourges of both land and sea. To have learned its causes and thoroughly provided against them—for it is only now and then in these days that a case is found—seems one of the most splendid monuments scientific preventive medicine has erected to itself.

Though the history of scorbutus is coexistent with the history of medicine, it is only during the last twenty years that the disease has formed any part of medical literature relating to infancy or childhood. It is probable that cases always existed among infants or children where the peculiar dietetic vices necessary to its production existed, but it is also probable that the increased use of artificial baby-foods has been in some way related to the more frequent appearance of the disease in these latter years. It is altogether likely that many of us have met scorbutus in its incipiency among infants and have not recognized the nature of the trouble.

Let us summarize briefly the common symptoms of the disease as we find them in the class of cases under consideration: The baby has a worn and fretful look, a bloodless and often muddy skin;

its eyes may be bulging, with ecchymotic patches in the upper lids, or there may be ecchymosis without the prominent eye; the child is peevish and often screams at your approach; the breath is foul; the gums are swollen, tender, and often ecchymotic — they extend down over the teeth, and bleed easily when touched; the tongue is covered with a dirty yellowish-brown coat; there is general muscular tenderness; the spine is often painful or sensitive to touch; the child is disinclined to sit up without support, and moves as if in pain; the thighs are swollen, very tender, and often have a shining appearance; there is often thickening of the lower end of the femur; sensation is acute, but muscular power is weak; there may be immobility of the lower limbs amounting almost to paralysis; there is a tendency toward easy fracture of the femur, the break occurring near the epiphysis. There is sometimes general purpura; indeed, these purpuric spots may be your first intimation of the constitutional vice lying back of them.

The pathology of scurvy, whether in infant or adult, is obscure. In the baby, one lesion has been found with marked uniformity where post-mortem examinations could be had, viz, the extravasation of blood between the bone and periosteum. Wide areas of bone are often thus stripped and left with small nutritive supplies. This accounts for the tender and swollen thighs. The swollen and bleeding gums and the exopthalmos are also due to extravasations of blood. An examination of the blood of those suffering with scurvy has shown a notable lessening of red corpuscles and of coloring matter, in some instances amounting to over half the normal.

In the baby the cause of scurvy is probably always dietetic. Just how the condition is brought about would be hard, and perhaps impossible, to say. The change is probably at bottom a chemical one. In the absence of fresh foods containing certain salts and acids, there seems to be a weakening of tissue metabolism. It is chemico-physiological—the absence of the chemicals contained in fresh vegetable food or its derivatives determining the phenomena of scurvy, or their presence producing health.

The question of prevention is more than one of fresh foods; it is one of fresh foods given in such form as to insure as little chemical change from a certain (not yet well defined) standard as possible. For instance, it has been found that scurvy may follow the use of fresh sterilized milk. Either with the application of heat has come about some new chemical combinations, or there may have been a destruction of germs necessary to chemical changes demanded by the baby organism in its food.

There has been a too ready disposition to recommend some of the many prepared baby-foods on the market, or to prescribe condensed milk. So commonly is this done that many parents put their bottle-fed babies on these articles without consulting the physician at all. These methods are not creditable to the physician, and, in the light of our recent knowledge, are most culpable. There may be instances—and these are especially liable to occur in our large cities—where fresh, wholesome milk is not to be had, where it becomes necessary to prescribe some one of the prepared foods. When this is done, however, the parents should always be instructed to give the child daily fruit juice, fresh-meat juice, or a small amount of some fresh vegetable broth. With these precautions, no doubt prepared foods may be safely and often advantageously given.

The treatment of scurvy in babies has already been quite fully outlined. It is evident that, the cause being improper diet, the treatment should be dietetic. Drugs play an important rôle. Bitter tonics, acids, and iron may be used, but nothing can take the place of fresh fruits, vegetables and meats. The form in which these shall be given must be determined by the conditions of the individual case.

Twenty-two cases of whooping-cough treated with inhalations of ozone are reported in the *Bulletin Medical*. It acted immediately in diminishing the frequency, the length and severity of the paroxysms; it shortened the course of the disease remarkably and the general health improved at once.

TRANSLATIONS.

MEDICAL PRACTICE ABROAD.*

(Formerly Therapeutic Suggestions from Foreign Journals.)

Volvulus and Forced Enemata.

Volvulus can occur in consequence of postponed defecation when the need of defecation is imperious, being produced by peristaltic and antiperistaltic movements. Sudden severe pain, well located, with meteorism, are the best symptoms. The treatment consists of forced enemata. Dr. Prioleau (*Bull méd.*, 1896), uses three, four, or five litres (with Esmarck's douche) of a watery solution of glycerine (100 ‰) and capillary punctures of the overdistended intestines, followed by abdominal massage.

Potassium Permanganate in Poisoning, with Phosphorus.

Dr. Ansal (*Medizin. Nenigk.*, April 20, 1896) recommends kalium hypermang. as the most efficacious antidote in poisoning, with phosphorus, which, transformed into acid-phosphor, is relatively not harmful. One-fourth to one-half of a litre in solution of 2.0–4.0: 1,000.0 must be taken at once and repeated in a half an hour. Dr. Hajnos had success even a half an hour after the poisoning. Dr. Erdoes administered two hours after the poisoning a wine-glass of 1‰–2‰ every five minutes till four litres were consumed; a hypodermatic injection of apomorphin was also given, and the patient recovered.

Treatment of Hemorrhoids.

Dr. Schächter (*Mediz. Nenigk.*, 1896) uses with good results interstitial injections. Carbol. acid and glycer., āā., four or eight drops are injected into each hemorrhoid. Attention is to be taken that the fluid should not touch the surrounding skin. In nervous persons this injection must be preceded by that of cocaine. In forty-one cases (males) the author was very well satisfied with this treatment.

Threatening and Unavoidable Abortions.

Dr. Marocco (*Lemaine Méd.*, 1896) recommends in unavoidable abortion the tamponing of the vagina with gauze in glycerin and the taking internally of the following powder:

℞

Phenacetini 0	3	(gr. v).
Morphini mur. 0	01	(gr. ⅙).

S.—One powder every hour.

With this treatment the abortion is terminated in twenty-four hours without pain.

External Use of Chloral.

Dr. Brodnax (*Lemaine Méd.*, 1896) recommends the following formula for external use of chloral:

1. For pruritus, followed by urticaria, or any other eruption:

℞

Chloral		
Acid carbol. . . . . āā 0	5	(gr. x).
Ol. olivae 50		(℥jss).

2. For toothache:

℞

Chloral	
Camphor	
Ac. carbol	āā 5.0 (℥jss).
Glycerin	

A piece of cotton soaked in this solution is put on the aching tooth.

3. For earache:

℞

Chloral		
Camphor		
Acid carb. . . . . āā 0	5	(gr. x).
Ol. ricini 15	0	(℥ss).

Some drops of this solution are put into the ear; the solution must be warmed each time.

4. For acute coryza:

℞

Chloral 0	5	(gr. x).
Ol. ricini 15	0	(℥ss).

After having cleaned the nasal cavities, wash them with this solution.

*Translated for THE MEDICAL AND SURGICAL REPORTER by A. Gordon, M.D.

Anti-diarrheic Action of Tannin.

Bachus (*Gazette Botkin's, St. Petersbourg*, 1896) administered tannin to twenty-three adults and forty-seven children. In only five cases the author did not succeed and then because these patients were affected with tuberculosis and tuberculous ulcers of the intestines. In all other cases the diarrhea stopped in two to three days.

The dose for adults was 0.5–0.8 (gr. x –gr. xvi); for children, 0.25 (gr. v). Of course a regular diet must be enjoined at the same time. For some children this treatment was preceded by calomel in doses of 0.008–0.01 (gr. $\frac{1}{10}$–$\frac{1}{4}$) each powder, three powders a day.

Treatment of Cirrhosis Hepatica with Urea.

Prof. Klemperer (*Berlin Klin. Wocher.*, January, 1896) obtained a very good result from urea in cirrhosis hepatica.

Ascites in cirrhosis of the liver yields but slowly to any medical treatment. The great hope which the author had in early tapping of the abdomen did not give the expected result, but, on the contrary, he observed harmful consequences. He then abandoned this treatment and had recourse to a treatment favorable to a slow reabsorption of the ascitic fluid, *i. e.*, calomel and digitalis, which gave satisfactory results. But even the last are not without objection; they provoke stomatitis, albuminuria, and inflammation of the digestive tube. Dr. Klemperer used urea in two cases of cirrhosis accompanied by enormous ascites. The patient's urine began to increase and the dropsy decreased. The urea is administered from the beginning in doses of 10 grm. (ʒiij) *pro die*, and in some days 15.0 (ʒss) and even 20 grm. (ʒvj). The last dose is to be taken during two to three weeks. The following formula is proposed by the author:

℞

Ureæ puræ	10	0 (ʒijss).
Aq. destill.	200	0 (℥vj).

M. S.—A tablespoonful every hour.

Anti-asthmatic Property of Caffein.

According to Skeritt (*Wiener Med. Presse*, January, 1896) caffeinum citratum is a very useful remedy for asthma, especially in the morning. 0.3 grm. (gr. v.) of caff. citr. is administered every four hours in powder or solution. For preventing an access of the disease it is sufficient to take at bedtime 0.3 to 0.6 grm. (gr. v–x) of caffeinum. In case the patient cannot foresee the attack let him take the remedy as soon as he begins to feel the oppression in the thorax and then continue to take it regularly during the day. Continue the treatment for several days after the attack is over.

Broncho-Pneumonia of Children.

The prognosis (*Le Gendre Semaine Méd.*, 1896) depends upon the children's age, hereditary defects and general and local conditions. It is very serious and becomes very unfavorable when the patient is of a tuberculous nature. Often broncho-pneumonia follows measles, whooping-cough and grip, and the prognosis depends upon the nature and gravity of the primary disease. Blisters, antimony, aconitum, morphinum, antipyrin and even sulfate of quinine must be proscribed. All these remedies will not combat the symptoms, but will only weaken the patient. Serum therapy is not yet sufficiently known for a permanent decision. Give the patient the best hygienic conditions possible, keep the mouth and the nostrils clean, maintain the functions of the heart with injections of caffeine and administer baths, at first warm, and later lukewarm and cold. The advantages of such a treatment are decreased dyspnea, good appetite and good sleep.

Quinosol, a New Antiseptic Remedy.

Kossmann (*Centralbl. f. Gyn.*, 1895) praises quinosol highly in gynecology. As a succedaneum to carbolic acid and sublime, quinosol has never given rise to auto-intoxication or eczema. Employed in powder for wounds with abundant secretion, it has no irritating nor caustic action. Moreover, it never injures the hands, which can, without any danger, be washed several times a day with a solution of 1 per 500. Kossmann thinks that quinosol would be very useful to midwives, to whom it is very dangerous to trust sublime.

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PHILADELPHIA, SATURDAY, AUGUST 8, 1896.

EDITORIAL.

VIVISECTION.

A somewhat belated copy of *Our Animal Friends* deals at length with the subject of vivisection. The very reasonable attitude taken by this magazine is in refreshing contrast to the exaggerated utterances of many well-meaning and tender-hearted persons.

The leading article discusses a bill submitted to the New York Legislature, "To prohibit vivisection and dissection in the public schools of this State." Since, after careful inquiry, the journal has found that vivisection has not been and is not likely to be practiced in the public schools of New York, it expresses the eminently sensible opinion that the proposed measure is supererogatory, and is liable to interfere with the efficiency of the present section of the penal code prescribing punishment for all sorts of cruel acts to animals. So far as dissection of the dead animal is concerned, it believes that the good taste of individual instructors and the advancement of special classes in physiology, should be considered.

In a second article, entitled "The Medical Profession and Vivisection," comment is made on a similar editorial in the *Medical News* of December 14, 1895, and we are pleased to note that the opinions of both journals, representing the conservative views of workers

in entirely different fields, are practically harmonious.

The editor of *Our Animal Friends* has voiced our own sentiment when he says: "Speaking personally, we could not make ourselves in any degree responsible for *any* painful physiological experiment, however beneficial its alleged motive might be; but, on the other hand, we know that the whole medical faculty, virtually with one voice, maintains that such experiments are at least occasionally necessary and that they have resulted in the alleviation of suffering to man and beast many thousand times greater than that which they have caused." But we do not agree with the statement. "On the other hand, we have constantly maintained that all needless experiments upon living animals by students, for the purpose of acquiring surgical dexterity, is unnecessary, and ought to be prohibited; that the repetition of experiments before classes of students for the mere purpose of demonstration is likewise useless and ought to be prohibited."

We believe that the consideration of this question—save in the case of immature and elementary students—ought to be shorn of all esthetic sentiment and limited only with regard to cruelty. The ordinary vivisection is simply an operation, performed under deep anesthesia. It lacks the curative aim of an operation on the patient, but it also is devoid of the mental anguish of anticipation and of whatever discomfort attends the post-operative period. The experimental operation is no more cruel than the practical one, and neither from the analogy of the human being nor from observation of animals, is there reason to believe that convalescence is particularly painful. The lower degree of mental and nervous development of the animal, and the fact that he is depressed neither by the shock of accident nor by the ravages of disease, make it probable that he recovers from the operation with a very moderate degree of discomfort. In some institutions the same dog has been used for a number of operations; he has submitted to the later ones with less apparent dread than when he first took an anesthetic, and has remained on friendly terms with those whom he would certainly regard with fear and hatred if he had suffered as the humane societies would lead us to believe. All things considered, it must be conceded that the victim of vivisection suffers less than the animal killed for food or in sport, or by accident, or the one which is "relieved of its misery by the agent" of the Humane Society. Hence, we believe that the enormous advantages of objective over descriptive teaching should accrue to the professional or advanced scientific student of physiology. We are also inclined to think that it is more humane and sensiblo for a surgeon to acquire requisite skill by operations on unconscious animals than to mangle human tissues.

Within comparatively recent times animals have become the subject of experiment with drugs, bacteria, and the chemical products of the latter. Such experiments rarely cause acute pain, the majority do produce moderate discomfort, while a considerable minority are entirely painless or even agreeable. The objection is frequently made that experiments in animals have accomplished nothing. We are inclined to admit that the ordinary physiological experiment has no direct bearing on practical therapeutics, but it does make better physicians for the plain reason that a man can better treat a diseased organ when his conception of the use of that organ in health is exact and vivid. As far as experimental operations are concerned, the man who denounces them as useless

is either an ignoramus or a liar. It is a matter simply of record—of history—that the surgery of the brain, the stomach, the intestine, the biliary passages, the refinements of the use of the ligature and suture, particularly in the peritoneum, depend in the most direct manner on vivisections. As to the study of drugs and bacteria, the animal-room is universally regarded as an indispensable adjunct of the laboratory, since in it are made the final and discriminating tests.

Class-room demonstrations without the use of anesthetics ought not to be allowed; in fact, it is doubtful if strictly painful experiments on animals have been of appreciable practical value. No student of common sense needs to have animals frozen to death in his presence in order to prove that a sheared animal will die more quickly than one covered with hair. Nor did the celebrated French brute who inflicted untold agonies in order to determine the exact point at which heat-rigor was produced accomplish anything for humanity or science. Such experiments have no practical issue, nor do they establish a principle; their instigators may act in good faith, but they have not the grasp upon physiological science that warrants society in allowing them to continue their cruelties, and there is ground for the suspicion that their devotion to science is but the cloak of a morbid mental craving to inflict and gloat over the sufferings of defenceless animals.

A Good Opening for a Young Physician.

Rev. G. C. Stull, a prominent Methodist minister of Butte, Montana, informs the REPORTER through a friend that a young married physician is wanting for a good practice and the management of drug store in connection with a business man who will stock the store on favorable terms.

This looks like a good opening for a young physician of character, familiar with the drug business. Full information may be obtained by addressing Rev. Geo. C. Stull, Butte, Montana.

ABSTRACTS.

POTTS' DISEASE OF THE SPINE.*

It is now generally accepted that this disease is due to the tubercle bacillus, indeed, tuberculosis of the spine and tubercular ostitis of the spine, are almost as well known terms as Potts' disease of the spine itself. It is characterized by inflammation and destruction of the bodies of the vertebræ, and the intervertebral disks, the anterior support of the bodies being removed, the upper part of the spine falls forward, and we have a resulting angular deformity of the back, more or less marked, according to the location of the mischief, and the amount of destruction that has taken place. As a result of this destructive inflammation which you may call caries, ostitis or what you will, we have a collection of matter, composed of broken-down osseous and other tissues, resembling pus in general appearance, but being, as a rule, distinctly tuberculous in character, unless infected as a result of accident or surgical interference.

The predisposing causes of this malady are heredity, injury, bad hygienic surroundings and age. It may occur in the wake of one of the exanthemata. It is essentially a disease of childhood, those between two and ten years being more

*J. W. Macfarlane, M.D., Pittsburg, before the Austin Flint Medical Club, Pittsburg, May 26, 1896.

susceptible. There are, of course, exceptions to this rule. In adults it is often the result of injuries.

During the last six months I have seen two cases of Potts' disease of the spine develop within the wards of the West Penn Hospital.

Mr. W., aged thirty-eight years, was admitted to the hospital October 16, 1895, suffering from suppurative inflammation of the right knee joint. It was thought that thorough drainage and fixation might give him an anchylosed but useful limb. There was immediate improvement in the man's condition, but we were not successful in securing anchylosis. There was a total arrest of suppuration, but we had preternatural mobility at the knee, with some backward dislocation of the head of the tibia. The limb being useless in that condition, it was decided to give him the benefit of an excision of the knee-joint, which was performed by one of my colleagues, December 7, 1895. The patient seemed to do remarkably well for six weeks, but following that, his condition gradually grew worse, and much to our chagrin, he developed a marked case of Potts' disease of the spine as a sequence of the excision, while still confined to bed.

The excision, which up to this date, had promised well, began to suppurate profusely and all signs of union disappeared. The patient's condition became alarming, and at his urgent request, I amputated his leg at the junction of the middle and upper third of the thigh, May 13th. His pulse following the amputation was almost imperceptible, and the temperature fell to 95 degrees; he, however, rallied nicely, and on May 18th, when the dressings and the drainage were removed, the flaps were found united throughout.

Frank L., a Hebrew, aged nineteen, was admitted to the hospital May 7, 1895, suffering from hip-joint disease of the right side. He was placed in bed under extension and supporting treatment. A large abscess formed in the hip, which was thoroughly drained. In spite of all our efforts, we were never able to build him up, and he finally developed a marked case of Potts' disease of the spine at the junction of the last dorsal and first lumbar vertebræ. He left the hospital for his home unimproved. There was no doubt as to the hip-joint disease.

The symptoms will vary with the region of the spine involved. In the cervical region, the patient attempts to fix the spine as he does at other points. There may be drawing back of the head, as in opisthotonos of mild degree or it may be drawn forward; it is usually deviated, as in wryneck. The patient at times is disposed to support his head with his hands, or lean it forward upon the sternum. There is short grunting respiration; pain extending along the occipital nerves, down the thoracic or even down the brachial plexus.

Traction upon the head, carefully made, frequently gives relief, and may be a great aid in making a diagnosis. If the disease be below the second dorsal vertebra, there will be few, if any, head symptoms; the spine is kept rigid, the patient walks with care, and only taking short steps; the respiration is grunting; there are pains about the stomach. If he be requested to pick up anything he does not bend his back, flexing his limbs instead, and supporting the upper part of his body with his hands upon his thighs; he does not jump off chairs as other children do, but slides down, using his arms as much as possible to guard against any sudden jar.

Sleep is disturbed by moans and sharp cries, which should not, however, be confounded with the shrieks of hip-joint disease. The patient is inclined to lie upon his stomach, as by so doing he gets the benefit of a certain amount of extension, which adds to his comfort; if he is in the dorsal position and wishes to get up, he first turns upon his face, and then rises.

As the lumbar region is approached disturbances of gait are more marked, and when these vertebræ are involved there is likely to be irritation of the bladder. Contractions of the psoas and iliacus muscles are likely to take place with resulting flexion of the thigh upon the abdomen, which is liable to be mistaken for hip-joint disease. This can, however, as a rule be quickly eliminated from the case, if a little care is taken. It is impossible, in both cases, if there is great flexion, to bring either limb down upon the bed, but in the flexion of Potts' disease, if the flexed limb be car-

ried towards the abdomen it can be moved freely in the joint without causing the least amount of annoyance, whilst in hip-joint disease rotation will be difficult or impossible and attended with excruciating pain.

The angular deformity or kyphosis which occurs may be confounded with that of rickets; the former as has been stated in angular, and whilst the compensating curves may be affected by extension, the angularity and rigidity remain; whereas in rickets, if the child be placed upon a person's knees, face downward, the kyphosis or backward curve will be converted into an anterior one or that of lordosis—showing the spine to be flexible.

ODOR AS A SYMPTOM OF DISEASE.*

The chief functions of the nose are: (1) Respiratory; (2) olfaction; (3) resonator to the voice; (4) office of regulator of the aëration of the middle ears.

The normal daily secretion of the nose is about one pint, which comes chiefly from the turbinated bodies, and is used in moistening the air before it reaches the lower respiratory organs. The nasal chambers heat the air for respiration and air in modulating and modifying voice sound, giving it proper resonance. Infinitesimal odorous particles dissolved and floating in the air are carried into the nasal fossæ and impinge upon the hairy terminations of the nerve filaments; thence the sensation is conveyed to the olfactory centres. It is the mucous membrane of the upper half of the nasal fossæ that is capable of appreciating odorous impressions.

Like the other special senses olfaction may be cultivated by attention and practice. Experts can discriminate qualities of wines, liquors, drugs, etc.

Diseases have their characteristic odors. Persons who have visited many different insane asylums recognize the same familiar odor of the insane. General paralysis of the insane affords us a typical example. It is a true cerebral disease, physiologically, pathologically, and psychologically. In it the substance of the convolutions of the brain—the highest in quality and function of any organic product yet known in nature—undergoes a process of degeneration or atrophy which finally invades the whole nervous system. The nerve and mind tissue die slowly and progressively. The blood current carries the waste tissue to the lungs for aëration, and the result is the foul characteristic odor of this disease.

It is not insane asylums alone, but prisons, jails, work-houses, armies in camp, churches, schools, and nearly every household that have their characteristic odors. It is when the insane, the prisoners and the soldiers are aggregated in large groups or battalions that their characteristic odor is recognized by our much-neglected "smeller."

Most diseases have characteristic odors, and by the exercise of the sense of smell they could be utilized in differential diagnosis. For example, favus has a mousey odor; rheumatism has a copious, sour-smelling acid sweat. A person afflicted with pyemia has a sweet, nauseating breath. The rank, unbearable odor of pus from the middle ear tells the tale of the decay of osseous tissue. In scurvy the odor is putrid; in chronic peritonitis musky; in syphilis sweet; in scrofula like stale beer; in intermittent fever like fresh-baked brown bread; in fevers ammoniacal; in hysteria like violets or pine-apple. Measles, diphtheria, typhoid fever, epilepsy, phthisis, etc., have characteristic odors.

The acuteness of the sense of smell is far greater in many of the lower animals (dogs, for example) than in man, and they employ it in guiding them to their food, in warning them of approaching danger, and for other purposes. The sphere of the susceptibility to various odors is more uniform and extended in man. The sense of smell is capable of great cultivation. For example, in the well-known case of James Mitchell, who was deaf and blind from birth, the sense of smell was his principal means of distinguishing persons and perceiving the approach of strangers.

* J. H. McCassy, M.D., C.M., M.A., Dayton, Ohio, in *Cincinnati Lancet-Clinic.*

SOCIETY REPORTS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated meeting held April 8, 1896, Hall of the College of Physicians.

The President, DR. J. C. WILSON, in the chair.

DR. ALFRED STENGEL read a paper, entitled

"THE TREATMENT OF PERNICIOUS ANEMIA."

DR. JAMES TYSON said that, notwithstanding the large amount of information that has been yielded by modern studies upon this subject, pernicious anemia must still be regarded as a *terra incognita*. It was formerly held that pernicious anemia is an affection of the blood-making apparatus, but most clinicians have come gradually to the view held by Dr. Stengel, that it is an hemolytic affection. Among reasons for this may be mentioned, in the first place, the experiments of Hunter, so amply confirmed by those of Griffith and Burr, showing the deposition of iron in the liver, representing there the destroyed corpuscles. Secondly, the condition of the blood in which there is a comparatively large amount of hemoglobin, with a proportionately small number of corpuscles pointing to a destruction of corpuscles, leaving a relatively large quantity of hemoglobin in solution. A most important reason, however, is the etiologic factor. The frequent association of the affection with long-continued, unyielding, gastro-intestinal disease is attested by the experience of many. Dr. Tyson referred to the case of a man who was a confirmed subject of indigestion, which was ascribed to all sorts of causes. At the end of twenty-five years, he fell into a condition of pernicious anemia. The hemolytic nature of the disease is also attested by therapeutics. While it is true that it is not known in what way arsenic acts, it is known that it does good and it must act in some way as a blood-builder. Dr. Tyson had personal knowledge of at least one case in which the symptoms of pernicious anemia disappeared under the use of arsenic.

Chlorosis is not such a widely different disease. The fact that some cases of chlorosis seem to pass into pernicious anemia raises the thought that the two disorders do not start from widely different bases. Chlorosis is sometimes present in the early history of a case that later passes over into pernicious anemia. It is true, there is a reversal of the relations of the hemoglobin and the corpuscles. Ignorance still prevails as to the nature of the hemolytic substance. The modern studies in the direction of toxic substances may help somewhat, but there is considerable yet to be learned. Dr. Tyson was not hopeful of anything very encouraging from the use of bone-marrow as a remedy. Clinical experience substantiates this view.

THE PRESIDENT related a marked case of pernicious anemia with a reduction in corpuscles to 800,000, and a hemoglobin-percentage of about twenty per cent. Most remarkable improvement occurred in a very short time under the use of progressively increasing doses of arsenic, light systematic massage and oxygen. The patient improved to such an extent that the arsenic was temporarily suspended and bone-marrow was administered. The preparation used consisted of two parts of bone-marrow and one part of glycerin, rubbed up to a paste in a mortar, and this was spread upon bread. In the treatment of profound anemia, the clinician should not be bound to any one method of treatment. Among other things, a carefully regulated diet is most important. Measures to increase quantitatively the amount of blood in circulation, such as the use of large quantities of food and of the normal salt-solution, hypodermically, together with light systematic massage and regulated exercise, are very important in the management of these cases.

DR. D. D. STEWART referred to two cases that were treated with bone-marrow—one with success and the other without any result. One case was considered as moribund. Every method of treatment had been tried, and the patient was very low. Bone-marrow was given in quantities as large as he could take, with extraordinary result. The man was soon up and about and assisted in some of the duties of the ward. He continued in that condition until about six weeks afterwards, when he left the hospital. The other case did not improve at all.

DR. J. P. CROZER GRIFFITH said that in the investigation by Dr. Burr and himself, a few years ago, with regard to the iron in pernicious anemia, an attempt was made to determine whether the increase in the red marrow was the cause or the effect of the disease. Statements had been made by two European investigators that bone-marrow could be made red by bleeding, but had never been confirmed as far as could be discovered. Dr. Burr carried out experiments on dogs in an endeavor to prove this. He succeeded, by bleeding a dog profusely, almost to the point of death, in producing red bone-marrow in the long bones. This was proof that the production of the red bone-marrow was the result of the anemia and not the cause of it. The bone-marrow was red merely because it had become active.

The statement that during the use of arsenic the hemoglobin increased more than the corpuscles, seems to be a proof that the hemolysis was still going on. The arsenic was curing the patient by stimulation of the corpuscle-producing organs, but in no way checked the blood-destruction and the consequent excess of hemoglobin over red-blood cells.

DR. STENGEL said, in conclusion, that extravagant claims had been made for bone-marrow as a remedy by some, while, on the contrary, it had been regarded as useless by others. The number of cases is so small that a decided opinion can hardly be formed; but, apparently, the agent is of doubtful value. In one of the cases reported it acted marvelously well to all appearances; in another it was without effect. Arsenic seems to stimulate hemogenesis and it is necessary to continue its use for a long time—perhaps for years. Other remedies or methods of treatment may be necessary, and it is to some extent a matter of regret that arsenic acts so well in most instances. There are cases, undoubtedly, in which this remedy alone is useless and in which a knowledge of all other plans of treatment is required.

PERISCOPE.

MEDICINE.

Formulæ.

Face bleach:

℞

Mercuric bichlorid, in powder	gr. iv
Calomel	ʒss
Cologne spirit	ʒss
Water	ʒijss
Glycerin	ʒvj
Essence bitter almonds	ʒss

When applied, to be well shaken.—*Fenner.*

Parsen's local anesthetic:

℞

Chloroform	parts 12
Tincture of aconite	parts 12
Tincture of capsicum	parts 4
Tincture of pyrethrum	parts 2
Oil of cloves	parts 2
Gum camphor	parts 2

Dissolve camphor in chloroform, add oil of cloves, and, lastly, the tinctures. This is credited with almost magical local anesthetic effects.—*Medical Age.*

For nephritis:

℞

Tinct. grindelia robustæ	ʒj
Tinct. convallariæ majalis	ʒijss
Tinct. scillæ	ʒi½

M. Sig.: Fifteen drops thrice daily.

—*Huchard.*

For eczema of the vulva:

℞

Tinct. opii., Sodii. bicarbonat., each	8 parts
Potassii bicarbonat.	4 parts
Glycerin	6 parts
Aquæ dest.	260 parts

M. Sig.: Bathe night and morning.

The bathing is to be followed by dusting on a mixture of forty-nine parts of starch and one part of powdered camphor.—*Lusch.*

For black teeth:

℞

Pulv. potass. chlorat.	ʒiijss
Pulv. sodii boratis	
Magnes. calcinat	
Calcii carb. precip.	ããʒvij
Essent. menth. pip	gtt. x

—*La Medecin Moderne.*

For whooping-cough in adults:

℞

Bromoform	15 parts
Tincture of gelsemium	16 parts
Syrup of lactucarium	120 parts
Powdered gum arabic	a sufficiency.

M. S.: Three or four teaspoonfuls to be taken in the course of a day.—*Bancock.*

For migraine, asthma or nervous colic:

℞

Pure chloroform	
Alcohol, of each	ʒij
Morphine	gr. iv
Syrup	ʒj
Water	ʒiv

Teaspoonful every half-hour till pain is relieved.—*Journal des Practiciens.*

For dysmennorrhea:

℞

Cupri arseniatis	gr. 1/65
Tinct. pulsatillæ	Mxv
Tinct. nucis vom.	Mviij
Aq. dest.	ʒiiiss

M. S.: One teaspoonful every hour, or half-hour, until the pain is relieved.—*Lancet.*

For hay fever:

℞

Zinci valerianat	gr. i
Pil. asafœtidæ co.	gr. ij

Make pills No. 1. S.: Two or three times a day.—*McKenzie.*

For hyperidrosis:

℞

Balsam peruv.	1	gr. xv.
Formic acid	5	ʒj gr. xv
Chloral hydrate	5	ʒj gr. xv
Alcohol	100	ʒvj

—L. Heusner(*American Medico-Surgical Bulletin.*)

For vomiting:

℞

Bismuthi subcarb.	ʒij
Aq. laurocerasi	℥ij
Syr. simp.	ad ʒvi

Teaspoonful for an adult every three hours.—*Sauer.*

For pityriasis capitis:

℞

Hydrarg. ammoniat.	℈j
Ungt. petrolii.	ʒj

M. Sig.: Apply.—*Van Harlingen.*

For prickly heat:

℞

Hydrarg. chlor. mit.	gr. xx
Lycopodii.	ʒij

M. Sig.: Use as a dusting-powder.—*Powell.*

℞

Sodii bicarb.	ʒj
Tr. nucis vomicæ	Mvj
Tr. cardamom. compt.	ʒij
Syr. simp.	fʒij
Aq. chloroformi	fʒss
Aquæ	q. s. ad. fʒij

M. Sig.: Teaspoonful every six hours.—*Eustace Smith.*

For erythema intertrigo:

℞

Calcis præcip.	gr. jss
Bismuth subnit.	gr. ʒj
Sacch. alb.	gr. iij

M. Et ft. chart No. i. Sig.: One three times a day.—*Van Harlingen.*

For coryza:

℞

Powdered iris	
Powdered marsh-mallow	ää dr. j
Tannic acid	gr. iij

M. Sig.: One such powder to be taken four or five times daily.—*Le Progres Medical.—Ga. Eclect. Jour.*

For stimulating the scalp:

℞

Carbonate of ammonia	30 grains
Distilled water	10 drachms
Tincture cantharides	2½ drachms
Eau de cologne	10 drachms
Rum	7½ ounces
Oil of lavender	2 drops

Dissolve the carbonate of ammonia in the water, mix the other ingredients together, and add.—*Journal of Pharmacy.*

For rhus poisoning:

℞

Sodium sulphite, granular	ʒj
Glycerin	ʒ ss
Camphor water	q. s. ad. fac. ℥ iv

—*Dr. Beringer.*

The Matter of Female Sterility Due to gonorrheal infection has been made a special study by Fehling. He claims that experience and inquiry show that 10 to 15 per cent. of all marriages are sterile, and of these over 50 per cent. are due to gonorrhea in the husband. In such cases, generally, a history of gonorrheal epididymitis is to be obtained, as the result of which the vas deferens becomes impermeable and no spermatozoa are contained in the semen. In rare cases, however, the author admits, with a comparative recent gonorrhea of the male, it is possible for conception to occur quite early after marriage, before infection takes place. In still rarer cases, especially in the unmarried, gonorrheal infection may not occur until the second or third month of gestation.

According to Weitheim, a man may have a latent gonorrhea, in which only a very few virulent gonococci remain in his urethra. During marital intercourse, these may reach the genital mucous membrane of the wife, and find there, especially if favored by frequent intercourse, a most propitious field for propagation, with increased virulence; these in turn reinfect the husband with an acute gonorrhea; thus both man and wife are mutually infected. The more recent the gonorrhea of the husband, the greater is the danger of infection for the wife. Exceptions, however, may occur; pregnancy may result with a recent gonorrhea in the husband. But while one of the results of gonorrhea in the male may be sterility, it is at the same time scarcely needful to refer to the seriousness of the symptoms which may ensue to the female as the result of gonorrheal infection. Gynecologists know too well the direful effects which gonorrhea in women may produce. The facts, therefore, in this connection, should be brought home to all those men intending to marry, who have been the victims of a severe gonorrheal attack.

To Abort an Incipient Cold when there is chilliness after exposure to draught or cold winds, dryness of the nares, or high fever alternating with chills, with rawness of the throat, give aconite, three or four drops of the tincture in four ounces of water, a drachm every twenty, thirty or sixty minutes for a few doses. It must be remembered that aconite has no place after you pass the above-described condition and the congestion has located.

If you meet one of those insidious conditions when you do not know how you took cold, no special chilliness, languid, drowsy, bones ache, flesh feels sore, dry coryza, soreness of throat, chest, infected eyes, asthenic fever, gelsemium will abort your cold in a few hours. Give same as aconite.

Camphor in broken doses, one-half to one drop doses, will readily meet the conditions given under aconite. This will readily abort colds and save a long train of suffering. These remedies are for the incipient stages.—*Journal of Materia Medica.*

The Diminution in the Natality of the French nation has become a matter of much concern, and occupied a prominent place in the discussion of the anthropologic section of the French Association for the Advancement of Science, at its last meeting. Dr. D. G. Brinton says, in *Science*, that the discussions were long and thorough, and that among other facts elicited it was seen that out of the eighty-six departments into which France is divided, in fifty-one the deaths exceed the births. The annual natality for the whole country is only 23.7 for each 1,000 inhabitants, and this number includes the still-born! To remedy this progressive depopulation, its causes must be ascertained. Dr. E. Maurel brought forward an interesting theory. He pointed out that the birth-rate is lowest in those departments where food is most abundant and cheapest. The relation between these two facts he held to be the prevalence of hereditary arthritic diathesis (uric acid diathesis), leading to diminution of reproductive vigor in both sexes, this diathesis arising from excessive alimentation. Another speaker, Dr. Pommerol, attributed the diminished natality to voluntary restriction, while others suggested the increase of religious celibacy, the laws relating to the division of property, the lateness of marriages, and the decreased reproductiveness of women.

The Non-Identity of Diphtheria in man and the lower animals is somewhat doubted by Dr. Leon Gallez, in the *Bulletin de Medicine de Belge.* He states that the bacterial proof of the non-identity of the diphtheric organisms found in man and the lower animals, such as the pigeon, chicken, calf, rabbit, cat, dog, horse and pig, is not conclusive. On the other hand, the numerous observations of the transmission of the disease from man to the lower animal, nine cases being cited from the literature upon this subject, and *vice versa*, seventy-two observations are considered by Gallez to be almost positive proof of the identity of the different organisms which have been described in connection with diphtheria in man and the lower animals. Four histories are also given in which the transmission of human diphtheria to an animal has been in return followed by its recommunication to man. While the morphology is different, it is not more so than can be explained by the variations of the Klebs-Loeffler bacillus as seen upon different culture media; likewise the symptomatology differs on account of the various anatomic peculiarities of the different species of animals in which the disease occurs. The author considers that we have in animals both an accidental form and an habitual one, the latter being merely a repetition of the culture of successive generations in the individual of the same species, the organism finally taking on special characteristics.

The Treatment of Epilepsy by the Use of vesicants along the seat of aura is summed up as follows by Dr. P. Dignat in *Bulletin General de Therapeutique:*

1. The circular vesicants applied along the course of the aura, either at the point of departure, or immediately centrad of it constitutes one of the most efficacious forms of treatment for certain forms of partial epilepsy, with motor or sensory auræ.

2. The treatment is applicable to partial epilepsy *not* due to cranial injury, cerebral syphilis, or any organic cerebral lesion.

3. Observation has shown that this procedure succeeds in cases where other modes of treatment have failed.

4. Finally, this method is absolutely inoffensive and devoid of secondary symptoms such as arise, for instance, after long administration of the bromides.

Tonsillitis is Considered as a Factor in rheumatic fever by Sir. W. Wade in the *British Medical Journal.* The poison of rheumatism is believed by some to be fabricated in the mouth and throat, gaining entrance to the system through the tonsils, producing first a tonsillitis, then rheumatism. Wade sustains the theory that tonsillitis is a primary infective disease of the lacunæ; rheumatic fever a secondary disease, arising from the absorption of microbes or their products into the system. The microbic theory of rheumatism is claimed to be gaining ground, hence the above theory. The basis of this theory is: 1. That the clinical phenomena of this disease corresponds in every particular to an infective disease. 2. Cases have been noted where rheumatism was undoubtedly transmitted from one person to another. 3. Various species of coccus and bacillus are found in the lacunæ during the acute stages. Wade concludes his argument by stating that the facts and considerations occurring in his experience have convinced him there is a very high degree of probability that rheumatic fever is directly due to microbic poison. But to confirm this further, clinical evidence is wanted of the association of the disease with slight throat disorders.

The use of iodine is recommended for trachoma by E. A. Nesnamow in the *American Journal of Ophthalmology.* He uses a one per cent. solution of iodine in liquid vaseline in cicatrical trachoma with infiltrations of the cornea, pannus, ulcers, and superficial opacities. In other forms of trachoma he applies a three to five per cent. solution of iodine in vaseline mixed with a small quantity of sulphuric acid.

A new and successful treatment for hay fever is given in the *Annals of Ophthalmology and Otology* by Dr. W. F. Strangways. After claiming that the theory of direct irritation by pollen on sensitive areas is untenable, he proceeds to explain his views, which briefly are that the cause is found in toxin generated from the pollen by a fermentative process in an alkaline solution. This toxin produces vaso-motor paresis with disordered secretions, which by irritation cause paroxysms of sneezing. Neutral and alkaline solutions but little affected the pollen, whilst very dilute acid solutions caused a rapid formation of a greyish exudation, hence he claims that alkaline solutions assisted to form this toxin, and the acid prevented it by causing other changes. His treatment consists in the use of a douche, using a solution containing acetic acid 2 min., salt 4 grs., resorcin 2½ grs., water 1 oz. The resorcin is not always needed. Internally he administered hydro-chloric acid, one to two drachms daily. In many instances the douche is sufficient alone.

A strange freak of Nature is reported by Mayd at the University of Prague. He recently opened the abdominal cavity of a young man, aged nineteen, who had suffered from infancy with a growth in the posterior portion of the abdominal area. There was found between the spine and the intestines the undeveloped form of a female child minus a head, but with discernible extremities, covered with fat and grown over with hair. The fetus was in a sitting position and connected with the circulatory system of the host in such a way that it participated in the nourishment received by the latter. The trunk was fifteen centimeters long, and hair forty centimeters long was growing from the part where the head should have been. Mayd supposed the growth to have been a twin child which for some reason or other grew into the lower part of the body of its fellow that was actually born. The young man did not survive the operation, and it is expected a post-mortem will more fully clear up this strange freak of nature.

Sulphur is highly praised as a specific in diphtheria by Dr. Fugate in the *Medical Summary*. He says that in 1854, after all means for the relief of a child moribund with the disease had been tried, he placed about a teaspoonful of pulverized sulphur in a small plate, and water in another, then, with a small swab, swabbed the fauces until a large portion of the sulphur had been taken up. The child, after several efforts, swallowed and continued to do so for about ten minutes. He then gave about three grains of sulphur and a spoonful of strong toddy; the child screamed; it was placed to its mother's breast and immediately commenced nursing, and in ten minutes more was asleep, breathing easily and naturally. Ten cases more were treated the same way and in the same manner, only that the toddy was omitted, except in bad cases. Since then he has used it in over six hundred cases and never lost a patient. He has used it in nearly all head, throat and lung troubles; in diarrhea, dysentery, cholera infantum; in diseases of the urinary organ, with great benefit; in scalds, burns, cuts and wounds of all kinds, and it has never failed to give satisfaction.

The qualifications for the practice of medicine and surgery in Turkey are related by Dr. Carl C. Hansen, in a letter to the *Pacific Medical Journal*. He says the only medical school in Turkey is located at Constantinople, and is called the Imperial School of Medicine for the Ottoman Empire. Those who wish to practice medicine in Turkey must pass an examination in the chief branches of medicine and surgery at this school. Before being admitted to the examination the candidate must present a diploma from a recognized medical school; that is, one that is recognized by the respective government of the country in which the school is located. That the diploma is issued by such a school must be certified to by the Consul-General at Constantinople. A certificate of practice, together with a petition asking to be admitted to an examination, must also be presented to the director of the school and a fee of seven Turkish liras. If the credentials presented have been satisfactory the candidate is admitted to an oral examination in anatomy, physiology, chemistry, therapeutics, practice of medicine and surgery. If this examination is passed satisfactorily, a permit to practice is granted. Failing to pass this time, a more extended examination must be submitted to.

Having passed the examination successfully, the following oath is taken before the director of the school in the presence of witnesses. "Under auspices of His Imperial Majesty, the Sultan, you have studied medicine in the Imperial School of Medicine, and you have been honored with a diploma. Do you now solemnly and truly swear that you, when invited, will treat all, be they poor or rich, and of whatever nationality, with equal care and attention; that you will never give any medicine which will cause abortion; that you will have a consultation with other doctors when the case requires it; that you will be careful in administering medicines which are of a dangerous nature, and that you will always take great care of the property of the State; that you will be obedient to the laws of the country and to His Imperial Majesty, the Sultan, and comply with all regulations ruling the practice of medicine in the Ottoman Empire.